DOCUMENT RESUME

ED 313 010 IR 014 057

TITLE Higher Level Distance Education. Perspectives for International Cooperation and New Developments in Technology. Proceedings of the Unesco International Consultation on High Level Distance Education (Geelong, Victoria, Australia, September 6-11, 1987).

INSTITUTION United Nations Educational, Scientific, and Cultural Organization, Paris (France).

PUB DATE Sep 87

NOTE 260p.

PUB TYPE Collected Works - Conference Proceedings (021) -- Viewpoints (120) -- Reports - Descriptive (141)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS Developing Nations; *Distance Education; Educational Technology; Foreign Countries; Higher Education; *International Cooperation

IDENTIFIERS Deakin University (Australia)

ABSTRACT

These proceedings of a Unesco conference on higher-level distance education begin with an overview of the topic by the Unesco Secretariat which covers: (1) distance education in different contexts; (2) new technological aspects of distance education; (3) an assessment of distance education as related to specific aspects of higher education; (4) higher level distance education networks; (5) cooperation in higher level distance education; and (6) objectives of the Unesco action plan. Two background papers dealing with world trends in higher distance education, opportunities for international cooperation, and media in distance education are included. Fifteen papers on distance education in the world are then presented, offering a range of views from 14 countries: Algeria, Australia, Cameroon, Canada, Costa Rica, Fiji, France, East Germany, Jordan, Nigeria, Thailand, the Soviet Union, Venezuela, and the United Kingdom. Six papers on developments in distance education at Deakin University (Australia) complete the collection. Biographical notes on contributors are included. (MES)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED313010

United Nations Organization for Education Science and Culture

Higher Level Distance Education

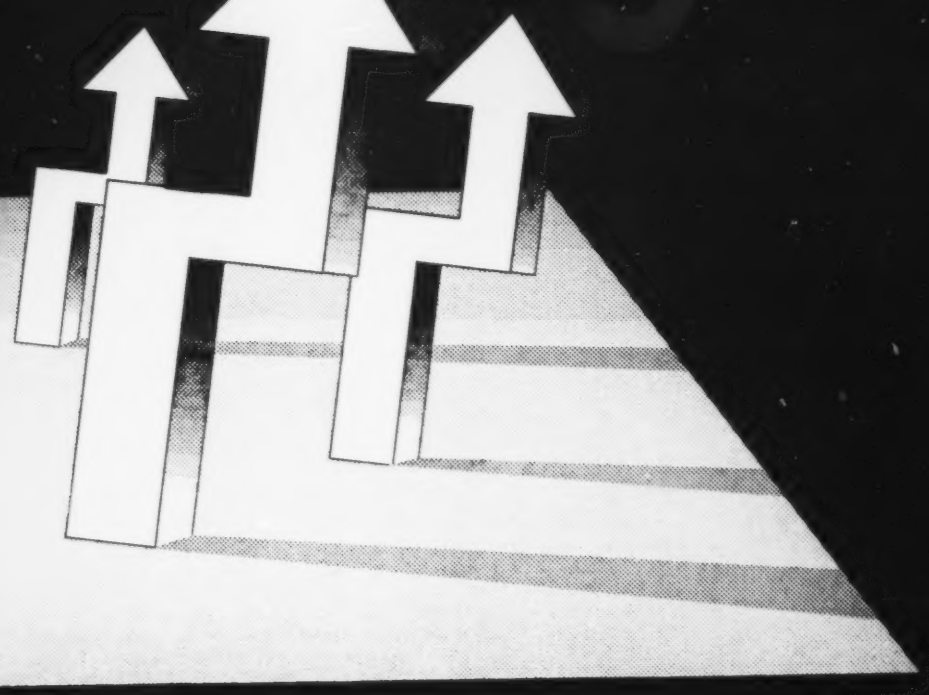
Perspectives for International Cooperation and New Developments in Technology

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy



IR014057

BEST COPY AVAILABLE

UNESCO

2

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Susanne Adlung

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Higher Level Distance Education

Perspectives for International Cooperation and New Developments in Technology

UNITED NATIONS ORGANIZATION FOR
EDUCATION SCIENCE AND CULTURE

UNITED NATIONS ORGANIZATION FOR EDUCATION
SCIENCE AND CULTURE

Higher Level Distance Education

Perspectives for International Cooperation and New Developments in Technology

Proceedings of the Unesco International Consultation
on Higher Level Distance Education,
held at Deakin University, Victoria, Australia,
6-11 September, 1987

A Unesco Deakin University Co-publication

Contents

I Introduction 1

II Background Papers

John S Daniel 17
World trends in higher distance education and opportunities for international cooperation

A W Bates 43
Media in distance education

III Distance Education in the World: A range of views from participants and observers

Algeria:
Mohand Benmouhoub 61
Reflection on the development of distance education: the Algerian example

Algeria:
Achour Seghouani 69
The National Centre of General Education by correspondence course, radio and television (CNEG)

Australia:
Paul H Northcott 81
Higher distance education in Australia

Cameroon:
Nalova Lyonga 95
The beginnings of higher level distance education in Cameroon

Canada:
W A S Smith and M Croft — 105
Notes on Canadian higher level distance education

Costa Rica:
O M Murillo Ugalde — 121
Higher distance education in Costa Rica

Fiji:
Marjorie Tuainekore Crocombe — 125
Higher education in the South Pacific through the University of the South Pacific

France:
Andree Bastard — 131
Centre National D'Enseignement a Distance: France

GDR:
Horst Mohle — 137
Initial and further education in the GDR: organized as higher level distance education

Jordan:
Walid Kamhawi — 147
Higher distance education in the Arab World

Nigeria:
A Segua Sagoe — 155
Higher level distance education in Nigeria

Thailand:
Wichit Srisa-an — 159
Higher level distance education in Thailand: a country report

USSR:
V P Solianik — 167
Higher education by correspondence in the Ukraine

Venezuela:
Miguel Casas-Armengol — 171
Recent developments of distance higher education in Venezuela

International Centre for Distance Learning,
United Nations University, Open University, UK: — 181
Keith Harry
Current trends in information and documentation work in distance education

IV Developments in Distance Education: the Experience of Deakin University 187

Angela S Castro 189
Teaching and learning as communication: the potentials and current applications of computer-mediated communication systems for higher distance education

Christine Crocker 205
A distance education data base - is it wise?

Dale Holt 209
Evaluation practice at Deakin University: the role of the Distance Education Unit and issues for further consideration

Philip Juler 225
University continuing education by distance education: an Australian viewpoint

Paul H Northcott 235
Higher level training and retraining: graduate work by distance education

Les Smith 245
Monitoring student progress or
If Nunits > Half * EnrolUnitsYear THEN ListStudent$ = "Yes"

V Bibliographical Notes on Contributors 257

Section I

Introduction

Note by the UNESCO Secretariat

The present publication is based on the papers presented by participants and observers at the International Consultation on Higher Level Distance Education organized by Unesco held at Deakin University, Geelong, Victoria, Australia, from 6-11 September, 1987. Unesco was represented by Dr. Muhammad Selim of Unesco's Principal Office for Asia and the Pacific, Bangkok, Thailand and by Dr. Mary-Louise Kearney of the Division of Higher Education and Training of Educational Personnel.

Unesco wishes to thank Professor Malcolm Skilbeck, Vice Chancellor, Deakin University and Professor Paul Northcott, formerly Chairman of the Distance Education Unit, Deakin University, for their assistance regarding the technical aspects involved in the production of this publication and also the Australian National Commission for Unesco for its support to this activity.

1 OVERVIEW

In September 1987, Unesco convened an International Consultation on Higher Level Distance Education, which took place at Deakin University, Victoria, Australia. The meeting brought together a small group of specialists from all parts of the world whose experience in this type of education is widely recognized. The consultation was requested to undertake a serious reflection on Higher Level Distance Education in the world today: the state of the art, the impact of technological advances on this area and strategies for improved international cooperation. The scope of this mandate was defined so as to ensure that the 3rd Medium Term Plan of Unesco (1990-95) would include the main trends and future directions relative to this important field of teaching and learning. A reflection on world problems underlines the importance and relevance of the discoveries and inventions which will engender yet further and far reaching technological progress in the world of the 21st century. Already it is clear that the speed of technological transformations and the dissemination of innovations bring about radical changes in methods of teaching and learning. This fact is a striking demonstration of the complex and varied relationship between the development of education and science for the improvement of society. In this respect, Higher Level Distance Education constitutes a particularly interesting field of endeavour, rich in challenge and opportunity and capable of serving many publics with widely differing needs.

Throughout the world higher level distance education continues to grow and evolve in an impressively diverse fashion. While firmly established for many years and in various forms in numerous countries, distance education at the higher level is now in full expansion, of-

fering new programmes, catering for new clienteles, employing new technologies and achieving new results through its significant impact upon the teaching and learning process.

In its complexity and diversity, this system of education reflects differences in political philosophy between countries, the availability of new methods of communication, world economic conditions and even the contribution of particular individuals.

The particular contribution of higher distance education is that it makes available to adults general, vocational and professionally oriented courses that they would otherwise be unable to undertake or be able to undertake only with great difficulty. Higher level distance education is particularly suited to people who wish to engage in mid career education and retraining but are unable to forego earning an income. Higher level distance education also provides adults with a "second chance" to obtain university studies because they had not been able to avail themselves of such studies earlier in their lives. The main difficulties with face to face teaching are that it requires participants to be at a particular place at a particular time. Learning by distance education overcomes both of these difficulties in that students can study where, when and how they choose although many distance education programmes include a few face to face sessions.

Furthermore, it is precisely this aspect which emphasizes the ever increasing role played by higher education in the development and advancement of society, not only amongst industrialized countries but especially in the developing world.

The following quote, from UNESCO's Second Medium Term Plan on the topic of Higher Education, Training and Research seems to express the essential mission of higher education in today's world:

> Without sound higher education no country can hope to train the managerial personnel needed to perform the increasingly complex functions to be discharged in any modern state, or gain access to the stock of knowledge that will enable it to play its full part in the international research effort. The institutions of higher education, in particular the universities, afford the clearest demonstration as to how the functions of teaching, research and training - this last function representing in some respects, the culminating point of education - intermingle.

Today, higher education is required to carry out tasks, to provide teaching and to conduct research of a very complex nature in response to different publics, different objectives, different contexts, and to do so with different levels of resources. In such a vast and ambitious programme, it is clear that new and innovatory systems of education have a very real contribution to offer. In this respect, distance education has already proved its worth and earned its place as an important element in regional and international cooperative efforts.

Unesco has long been involved in distance education as part of the development of educational systems throughout the world. The various projects and papers in this latter area reiterate certain important themes: the need for clear and consistant policies, the successful results to be obtained from the sharing of resources, the necessity to ensure a strong infrastructure of highly trained teaching and administrative personnel to produce satisfactory academic standards, the ever growing linkages between higher education, industry and private enterprise.

To achieve these ends, a strong emphasis has been placed on the value of technical support with regard to the development and exchange of instructional materials, methodology and the improvement of standards of teaching and learning.

Moreover, it has become vitally important to develop cost effective innovative methods in the training of technicians and engineers because of the impact of technology on education.

Unesco is aware of the needs of its Member States and sensitive to their emerging patterns of thought related to solving the problems of educational development. In this area, distance education has much to offer, particularly if it is reasonably priced and far reaching in its services to teachers and students.

Special mention must be made of the Higher Distance Education Programme run by Unesco's Principal Office for Asia and the Pacific (PROAP).

Since 1983, this programme has been growing both in intensity and scope. It has been instrumental in providing training and orientation to over 460 administrators and academics from 13 Member States of UNESCO. This was accomplished through a series of regional and national training workshops, study visits and attachments which primarily covered management and materials development aspects of distance education. Several such projects have been planned for 1988 and 1990. Nine issues of the newsletter Never Too Far and several other reports and publications have been published.

Distance education is the major focus of the Consortium on Innovation within the framework of PROAP's regional cooperative programme in higher education. The activities are developed and carried out by a network of the leading distance teaching universities in the region. PROAP's initiative and sustained efforts have brought them closer to each other in as much as they share their expertise and experience.

Another significant result has been the establishment of the Asian Association of Open Universities. The founding conference supported by UNESCO and Sukhothai Thammathirat Open University (STOU) took place in Bangkok in November 1987. Signatories to the charter of the Association are eight leading institutions in the region.

The impact of the programme is continuing. As a follow-up of a regional workshop, three universities have decided to pool their expertise to develop a joint course in human environment at the master's degree level. Similarly, a number of universities have joined hands on projects to produce three video programmes to be used as supplementary materials in their teaching programmes.

PROAP's cooperation with the Asian Development Bank in the planning and organization of a major regional seminar on distance education (1986) and its contribution of a resource paper have been appreciated by the bank. This was a step forward towards fostering a better relationship between Unesco and the bank.

It is expected that as a result of Unesco's effort a regional resource centre in distance education will be established. A planning meeting for this has been scheduled at STOU in June 1988. The resource centre is seen as a depository or a documentation centre on which others can draw for course and instructional materials development, research and short training.

Another notable example of Unesco's efforts in distance learning is seen in its contribution to the International Technological University (ITU). The proposal here is for an international distance learning institution which will offer courses at undergraduate and postgraduate level. It is hoped that eventually its prospectus will include mechanical, electronic, electrical, civil, structural, chemical and agricultural engineering together with bioengineering, computing and management courses. Certainly, its courses will be tied to the needs of industry and commerce.

Therefore, while Unesco itself cannot undertake large scale development programmes in higher level distance learning, it is very well equipped to identify problems, to create an arena for discussion from which useful solutions may emerge, to provide expertise which will refine these suggested solutions into action plans and allow indigenous personnel to take charge of their own educational systems.

With specific reference to the development of higher level distance education, Unesco's role is to indicate the direction to be followed, to monitor on the issues involved and to execute projects which demonstrate the solution of problems, thereby stimulating by example. This approach is very clearly demonstrated by Unesco's decision to hold an international consultation in Higher Level Distance Education in Australia in 1987.

With regard to the meeting held in Australia in 1987, it should be noted that this was convened in conformity with the Approved Programme and Budget of Unesco for 1987-88, Para.05506, and in accordance with Resolution 5.5 of the General Conference at its 23rd Session which invited the Director General to help to establish national systems of open and distance education in Member States. The text of the resolution is presented below:

RESOLUTION: 23rd Session of the General Conference of Unesco, Sofia, Bulgaria, 8 October - 9 November 1985

5.5 Open and distance education

The General Conference,

Considering the importance of distance education at both secondary and tertiary levels on account of the role it can play in national development, especially with respect to out-of-school youth,

Realizing that the opportunities for education at the higherlevel are limited in developing countries because of constraint of resources and socio-economic handicaps suffered by a large number of young people,

Appreciating that the open university model has a good potential for democratization of higher education by providing integrated university-level courses in order to upgrade the knowledge and skills of working adults in the public and private sectors and by giving such adults living in rural areas the opportunity of enrolling in a degree or diploma course and the chance to work and study at the same time,

Invites the Director-General to co-operate with Member States in extending the range of educational opportunities by providing technical support, through consultant services and exchange of specialists, for the setting up of a national system of open and distance education, with particular regard to the development and exchange of instructional materials, methodology of distance education and other measures for improvement of standards of teaching and instruction.

It is important to emphasize that this Resolution takes into account the contribution which such systems can make to the democratization of higher education, notably in developing countries where access to this level of training is limited due to financial constraints and socio economic obstacles which lead young people to abandon their education.

The basic aims of this meeting were, therefore, as follows:

- to take stock of recent developments relating to the use of higher level distance education of new technologies such as communication techniques and facilities and electronic data processing;

- to identify how communication techniques and facilities as well as electronic data processing can enhance the contribution made by higher education to meeting the needs of society;

- to specify the domains which require regional or international cooperation so that the contribution made by higher education institutions may be enhanced;

- to identify the measures to be taken in order to create and reinforce existing mechanisms and networks of cooperation on the regional and international levels and the specific role which Unesco may play in supporting this type of cooperation.

Thus, by focusing upon technological advances in higher level distance education, the implications of these for higher education itself and particularly the targets and mechanisms of cooperative initiatives in this area, the consultation aimed at helping to assure

> ... the reduction of disparities and a better distribution of knowledge in order to encourage the development of new knowledge from which the whole of mankind should be able to benefit.

2 OVERVIEW OF DISTANCE EDUCATION IN DIFFERENT CONTEXTS

2.1 Recent developments

The participants highlighted the major developments in distance education in the different regions of the world. Some key trends noted are as follows:

- the use of distance education to assist in meeting national and regional manpower needs;

- the use of computers, satellites and other technologies;

- the existence of a bimodal pattern of student enrolments in distance education (i.e. serving school leavers and working adults);

- although much distance education is provided by dual mode institutions, i.e. they teach both on campus and by distance education, single mode distance teaching institutions have become an important feature, especially in some developing countries;

- the increasing awareness that needs and resources be carefully correlated in order to achieve effective results;

- the recognition that existing resources are both considerable and high in potential benefits;

- a diversity in the clientele, e.g. workers seeking job training as well as other students who aim at personal development through their studies;

- the emerging typology of higher level distance education institutions which could be distinguished in terms of two key criteria:

  a the level of commitment to distance education within the establishment itself;

  b the level of government support for distance education.

2.2 Factors facilitating or impeding the development of distance education

An analysis of these elements reveals that such factors are indeed often complementary in determining the progress or delays in distance education development. For this reason they may be tabled as follows:

Facilitating Factors	Impeding Factors
effective use of resources	poor use of resources
adequate funding (i.e. from the state or other sources)	inadequate funding
strong institutional leadership	weak institutional leadership
efficient personnel	insufficiently trained personnel
good coordination at national level	poor national coordination
solid teaching methodology	inadequate teaching methodology
linguistic uniformity	cultural barriers including language
acceptance of innovation	resistance to innovation
strong political continuity and support	lack of continuity
cost effective technology	expensive technology
complementarity of conventional and distance education systems	competition between systems
clearly defined objectives and clientele	poorly defined objectives and clientele
adequate state support for access to technology	inadequate support
harmonious relations between academics and their partners, e.g. administrators and technicians	poor relations between academics and their partners
serious long range planning	absence of long range plans
strong ties with industry for professional training	weak linkage in this area
ability to adapt to changing needs	inflexible systems

This review and analysis led the consultation next to the related and centrally important issue of regional cooperation in distance learning.

2.3 Regional cooperation

The degree of collaboration already in existence at the regional level is most encouraging. However, strong national coordination is an essential factor in the efficient management of such regional efforts on an extended basis.

Noteworthy successes in this area include the networks existing within the framework of the Unesco Regional Cooperative Programme in Higher Education for Development in Asia and the Pacific. The 11 country consortium involved in the University of the South Pacific Extension Services Programme is another example. Also, the 9 nation Southern Africa Development Coordination Conference (SADCC) initiative should lead to significant collaboration in the domain of higher and upper secondary distance education in that region.

Similar developments are taking place in Latin America, in Europe, the European Association of Distance Teaching Universities and in the Arab world.

This field is extremely complex and this underscores the need for clearly defined objectives and efficient mechanisms of cooperation. This is vital for these efforts to produce significant results.

2.4 Development and use of technology

A clear policy on the development and use of technology is a sine qua non of its true effectiveness. This is particularly important at the institutional level, where local authorities play a vital role.

Furthermore the term "new technologies" (i.e. innovative equipment or new applications of existing systems) must be clearly defined.

In all cases, technology should be communication oriented and enhance the role of the instructor in the distance learning system.

Regarding staff, a distinction should be drawn between the teacher and the technician responsible for providing technical support for the technologies used in the teaching/learning process.

Thus, criteria for the selection and use of technology might well be:

- its usefulness (appropriateness);
- its cost effectiveness;
- its ability to serve the teacher and the learner.

3 AN APPRAISAL OF NEW TECHNOLOGICAL ASPECTS OF DISTANCE EDUCATION

3.1 Applications

While there is strong support for the human factor in the development of distance teaching and learning and, as a corollary, that technology should be the servant of the instructor, it

is also recognized that the ongoing advances in technological innovations must be monitored in order to assess their relevance for open and distance education systems.

The major applications of the new technologies might be listed as follows:

- the enhancement of teaching student interaction;
- the enhancement of colleague interaction, especially on a national and regional basis;
- the possibility of rapid and low cost transfer of data by these new technologies;
- the production and exchange of materials;
- the storage and retrieval of extensive information through innovations in data base technology;
- the capacity to improve student evaluation by means of computerized files and progress records;
- more rapid and efficient evaluation and feedback of student performance in the distance learning mode;
- the linkage to international networks through satellites.

The current range of equipment is so extensive that the likelihood of its suitability and/or adaptability to different contexts where specific conditions pertain is steadily increasing.

For this reason, a strong emphasis must be placed on three important elements of the technology issue:

- The academic community must ensure that adequate research is carried out on the pedagogical (and in view of the largely adult public involved in higher learning distance education, on the andragogical) aspects of the technology.
- Serious approaches should be made to national authorities to ensure that this technology can be utilised with optimal results and that advantageous conditions are provided by state owned services: e.g. available telephone lines, access to satellite use, linkage to national computer systems.
- At the same time, dialogue should be opened between the academic community, national authorities and the major industrial and commercial partners involved in the development and marketing of new technology. In this way the needs of higher level distance education in different countries may be identified and satisfied by means of close collaboration amongst the partners involved.

3.2 Evaluation of selected technology

The following are included as examples of the effective use of new technologies in higher level distance education:

Computer conferencing
The variety of software available, coupled with adequate access to institutional and national computers, means that this type of communication is becoming more widespread and thus has important applications for developing interaction between teachers and students as well as for the administrative aspects involved in distance, e.g. student assignment correction and feedback.

Electronic mail
Again, such a system depends on strong links to established computer networks and has clearly positive implications for the improvement of communication between colleagues and students at the national, regional and international levels. For instance, the model demonstrated by AOLIN (Australian Open Learning Information Network) could serve as a basis for applications elsewhere.

The electronic transfer of data is increasing rapidly in importance in higher level distance education.

Bibliographic data bases
Important advances of compact disc technology (e.g. the CD-ROM system) will enhance resource collection and information retrieval on a large scale. The system can handle graphic material and will operate in conjunction with a personal computer, thus rendering it a very attractive technological aid.

Computer assisted student evaluation
One of the many problems associated with evaluating student performance is the monitoring of academic progress. Every institution develops a set of guidelines or rules by which the progress of each student is judged, but as the student population grows so the problem of applying the rules accurately becomes larger and more complex. Indeed, the process can become excessively time consuming and wasteful of human resources.

A computer assisted process called APE (Academic Progress Evaluation) has recently been developed which is capable of evaluating the academic progress of a thousand students in under five minutes, and without error. The same task placed before a committee of academics for manual processing would take two to three days and contain a significant number of errors.

Inexpensive and comprehensive, this method facilitates the task of evaluation for staff, thus permitting a more effective use of their time elsewhere in teaching and counselling.

Teletutorials
This is a particularly efficient contribution to distance teaching and learning provided that there exists a solid infrastructure of communications systems, especially good telephone facilities. Teletutorials can involve up to 20 students in the distance learning process and constitute a versatile and fairly low cost option especially if the telephone is used at non peak time.

Teletutorials have considerable potential for distance learning due to their flexible character and suitability to various contexts, including bicultural education. However, factors such as the constraints of lack of visual communications and the practical difficulties of different time zones for telephone linkage are limitations of the technology.

Finally, it should be stressed that print is still the basic technology of distance learning, especially at the higher level of study. Moreover, the importance of the new technologies of print in reducing costs and production time both for new courses and for course revisions and in enhancing the quality of presentation should be remembered at all time.

4 ASSESSMENT OF DISTANCE EDUCATION AS RELATED TO SPECIFIC ASPECTS OF HIGHER EDUCATION.

4.1 Course development

The trend towards short and non award courses is rapidly increasing and constitutes an important factor in the democratization of education.

Furthermore, such courses frequently contribute to the professional qualifications of students. Where award courses exist it is desirable for these to be recognized within the national system so as to ensure full equivalence with conventional degrees and diplomas.

4.2 Training

Distance learning has a true mission in this domain as it offers excellent opportunities for continuing training for certain social or professional groups such as women, civil servants, teachers and managers.

4.3 Postgraduate and continuing education

The area of postgraduate studies through distance learning is one in which much more research could be undertaken as a growing need is clearly perceived. However, there remains much work to be done in terms of transferring the elements of conventional postgraduate studies to the distance mode, e.g. graduate seminars, supervision and counselling services, evaluation methods, library skills and research training.

With regard to the field of continuing and lifelong education, distance learning has a particular application due to its flexibilty and varied content. The clientele involved in this area is of special note due to its volume and degree of motivation, thereby creating an educational demand which must be satisfied.

4.4 Research priorities

Distance education, as is the case with any specific field of scholarship, is fast developing its own set of research priorities; notably data on costing, including the possibility of case studies and pilot projects, the applications of technology, especially within the context of developing countries, and the contribution of distance education to the educational process, e.g. career development. It would be desirable to establish a list of research priorities with the assistance of a suitably specialized body such as the International Council for Distance Education.

4.5 Student support services

Perhaps it is too easily forgotton that distance education requires strong and effective student support services similar to those existing in the conventional educational system. The student who elects to undertake a course by means of distance learning is entitled to the same provision and high standard of orientation, monitoring, evaluation and career counselling enjoyed by his counterpart in conventional institutions. It is high time that the principle of student support services is recognized and promoted so that these facilities may be established on a more widespread scale.

5 HIGHER LEVEL DISTANCE EDUCATION NETWORKS

A review of the existing cooperation and networking in this field is impressive because it reveals the extent of operations currently in progress. Examples of the mechanisms and agencies involved are:

Unesco,
United Nations University Open Learning Unit (UNUOLU),
International Council for Distance Education (ICDE),
The Commonwealth Secretariat,
International Association of Universities (IAU),
Association des Universites Partiellement ou Entierement de la Langue Francaise (AUPELF),
The European Association for Distance Education (EADE),
Asociacion Iberoamericana de Educacion Superior a Distancia (AIESED),
Asian Association of Open Universities (AAOU),
to name a few.

5.1 Objectives

The commitment to the promotion and development of distance education amongst these bodies is commendable. Nevertheless, the time has come when a clearer analysis of objectives in various domains may be both opportune and beneficial so as to ensure the optimal orientation of future efforts.

5.2 Activities

Once again, a survey of the activities being undertaken by these groups reveals a similarity of purpose and an appreciation of the priorities to be addressed in higher level distance education e.g. national, regional and international linkages, research on the use of new technology, course evaluation, the exchange of data and information and the training of personnel.

5.3 Improvements

These observations suggest that a strong basis already exists in terms of higher level distance education networks. Improvements and reinforcement would now seem to be logical and desirable. In this respect, cooperation at the national, regional and international levels has a real role to play so as to enhance the significant efforts already in progress. For this reason a review of cooperation initiatives should be undertaken.

6 COOPERATION IN HIGHER LEVEL DISTANCE EDUCATION

6.1 Strategies for cooperation

It goes without saying that certain strategies must be used in order to achieve effective cooperation at the national, regional or international levels.

Such strategies are limited in number but must operate efficiently to obtain worthwhile results. They should have the following characteristics:

- clearly defined objectives;
- coordination at the specific level;
- adequate funding;
- strong support from national, regional and international bodies;
- access to communication technology for information and documentation exchange;
- mechanisms for the exchange of personnel and materials;
- clearly elaborated evaluation methods.

6.2 Joint research projects

The advancement of priority research is a vital objective to attain. Therefore, cooperation initiatives for the joint production of materials, assessment and evaluation procedures, the recognition of degrees and diplomas, the impact of distance education on conventional systems and the management of distance education could fruitfully be carried out at the national, regional and international levels between the principal partners involved. This would generate a stock of information on these issues within various contexts.

6.3 Transfer and exchange of results

It is recognized that information must be shared amongst all interested parties if distance education is to flourish. Thus, efficient methods of transfer and exchange are required. This points the way to the establishment and enhancement of information sources, especially data bases and the need to ensure that access to such services is guaranteed for both industrialized and developing societies. In fact, this aspect becomes the central issue in the advancement of higher level distance education.

6.4 Use of technology and communications systems

Strong emphasis must be placed on the ever increasing impact of technology and the role of communication systems regarding the development of higher level distance education. In view of the disparities between industrialized and developing countries it has become essential to study the uses and applications of technology along with their costing. Cooperation initiatives could assist by sponsoring pilot projects and implementing case studies in this area, including the financial implications of such measures.

6.5 The role of international agencies

Current trends would seem to point to the need to define, more specifically, the role of international agencies, including Unesco, in the development of distance education at the higher level. By the year 2000 A.D., there will be significant increases worldwide in the already high enrolments in distance education, thus necessitating strengthened infractructures and improved services to deal with these increases in enrolments.

The number of agencies of a truly international character concerned with distance education at the higher level and capable of undertaking activities which will enhance the quality

of this education are very few. If these bodies can find ways of collaborating to advance the objectives and activities of higher level distance education as previously identified, then this field of education will be well served. To this end, the consultation proposes a draft plan of action which could involve the major bodies already listed both on an immediate and on a longer term basis.

UNESCO ACTION PLAN

Immediate objectives

1 Data bases of current information and of information on the literature of higher level distance learning should be developed and made available to users world wide. Bodies such as the International Centre for Distance Learning of the United Nations University and the International Council for Distance Education could be possible partners in this initiative.

2 A survey of existing resources in higher level distance education at the national, regional and international levels should be conducted by a suitable body.

3 An analysis of the uses of technology, including their financial implications in the field of higher level distance education, especially in developing countries, should be undertaken.

4 Regional networks and plans of action using appropriate regional bodies as focal points should be further promoted and developed.

5 Closer collaboration between Unesco and the International Council for Distance Education (ICDE) should be fostered. Similar collaboration should be encouraged with other international and regional agencies.

Longer term objectives

6 A global research programme, carefully coordinated so as to ensure the identification, analysis and evaluation of key issues in distance education, especially at the higher level, should be established. This would draw upon the factors influencing the growth and development of distance education so as to ensure long range planning.

7 The collection and dissemination of statistical data on higher level distance education should be improved by means of appropriate surveys. This information could be collected and published through an international body such as Unesco.

8 Increased funding for distance education at the higher level should be obtained.

9 Facilities for the production and exchange of materials, including the reduction of copyright restrictions and language barriers, should be improved.

10 The worldwide establishment of national centres of excellence in higher level distance education should be encouraged in collaboration with appropriate national authorities.

Conclusion

The specialists gathered at this consultation were charged with undertaking a critical appraisal of the state of higher level distance education. In the course of their deliberations, they made frequent reference to the pressing need to enhance this type of learning in order to meet the challenges ahead. It was, therefore, their objective to present a realistic analysis of the status quo and of future requirements. At the conclusion of the discussions, it was unanimously agreed that the principal purpose of higher level distance education should be to ensure quality in this type of instruction so as to meet adequately the needs of society, which vary enormously according to the specific context.

Consequently, the proposals and recommendations of this international consultation will be taken into account by Unesco during the preparation of activities relative to this field of education to be executed within the framework of the Third Medium Term Plan (1990-95).

Section II

Background papers

World trends in Higher Distance Education and Opportunities for International Cooperation

John S Daniel
Laurentian University
Canada

Abstract

In part one developments in university distance education in the different regions of the world are reviewed. Trends can be observed in the aims for which distance education is used, the programmes offered, the students served, the technologies employed and the results achieved. Part two examines mechanisms for international cooperation in higher distance education and suggests how these might usefully be developed in the light of current trends.

PART I

Higher Distance Education: A World Tour

University level distance education continues to grow and evolve in a marvellously diverse fashion around the world. The diversity reflects differences in political philosophy between countries, the availability of new methods of communication, world economic turbulence, and, in a few cases, the impact of particular individuals. The following vignettes attempt to capture the salient features of higher distance education (HDE) in various countries and regions. In order to call attention to the *objectives*, *clientele*, *programmes*, *technology* and *results* of the developments described these terms are usually underlined. Conventional higher education is abbreviated as CHE.

The Soviet Union and Eastern Europe

The right to distance education forms part of the constitution of the USSR (Article 45);

> Citizens of the USSR have the right to education. This right is ensured by free provision of all forms of education,... by the development of distance and part time education courses,... by the provision of facilities for self education.

The *objectives* of HDE in the USSR are closely tied to the efficient training of skilled manpower. Ilyin (1983), justifies the role of HDE in the USSR in four points:

. better training of specialists by the combination of studies and work;

. HDE costs 2-3 times less than full time CHE;

. the work/HDE combination prevents students from switching professions after training - which 15-20% of the graduates of CHE do;

. graduates of CHE need 2-3 years of work before mastering their skills.

The clientele for HDE in the USSR is huge, involving some 1.5m students, or 30% of all students in institutions of higher learning (Ilyin 1983). Entrance is on the basis of competitive examinations. There are 14 specialized distance teaching universities (DTUs) and 800 distance subsidiaries and branches of full time universities and institutes offering a complete range of *programmes*. The *technology* of Soviet HDE involves correspondence courses (study guides and text books) and some television on a national educational channel. Its distinguishing feature is the 30% of study carried out in face to face settings, sometimes called the "consultation model". Soviet DTUs operate branches across the nation (e.g. 23 branches for the USSR Financial and Economic Institute for Distance Education which has 32,000 students). Students are given paid leave from work to keep up with their courses and attend lectures and practical work at these branches.

The countries of the Soviet bloc are pleased with the *results* of this model of HDE and seek to improve each element of the system. Mohle (1983), talks about better integration of independent work into the educational process. He repeatedly stresses the goal of training "creative personalities" who will take "personal responsibility". Holmberg and Keegan (1984), note that Marxist-Leninist thinking is the framework for teaching and research for distance educators from the Soviet bloc. An article by Jedrzycki (1984), on the proposed Open university of Poland, is evidence of the activity in that country.

Asia

The most exciting developments in distance education in the 1980s have occurred in the Far East. Faced with the common need to expand higher education, these countries have used distance education in ways that reflect their varied educational and political traditions.

China

China, home to one quarter of humanity, is expanding the provision of distance education rapidly. The *objective* is to meet the needs of the development of the national economy and of society (Jianshu 1987) as part of the modernization of education. While the rationale behind HDE in China and the USSR is similar, the Soviet emphasis is on improving a well established educational system, whereas HDE in China is part of a massive catch up operation. In 1983, only 0.6% of the population were university graduates, while 23.5% were semi literate or illiterate. In relation to statistics like these the number now involved in HDE in China, impressive though they are in absolute terms, represent only a modest beginning. But there is no lack of idealism. Staff are urged to gain 'a deeper understanding of higher correspondence education in the cause of socialist economic construction, to get them to dedicate their lives to the development of higher correspondence education in China' (Jianshu 1987). The aim is to provide HDE to 20m Chinese over the next 15 years.

In 1983, around 1m Chinese, or some 40% of the country's university population, were studying at a distance. One third of this *clientele* was enrolled in the correspondence programmes that are offered by 311 of China's 800 colleges and universities; one third was associated with the Radio and Television University of China (RTVU) - a decentralized system of institutions; the final third was associated with the local TV universities which, since 1978, have 'sprung up like bamboo shoots after a spring rain in China' (Yu Xu 1986).

Jianshu (1986), gives the example of the provision of higher correspondence education in the city of Beijing. 42 of the 74 colleges and universities in the city have correspondence departments with an enrolment of 30,000 undergraduate students in 140 subjects. The RTVU is described by McCormick (1985) and Yu Xu (1986) describes in some detail the operation of a local TV university (the Chuansha County Branch TV University).

As in the USSR, entry to HDE in China is by selection and there are close links with the workplace. Jianshu (1987), reports on the unified entrance examination introduced in 1986 and taken by 1.3m people. Many students at the RTVU branches are workers released full time with pay. They watch the TV programmes in groups at the branches where they also have contact with part time tutors. Although the TV universities are not "open" universities, the Chinese hope that the vast classroom without walls which they represent will, as a side effect, inspire higher educational ambitions in the population at large.

The *programmes* offered by correspondence in China cover a wide range of topics and lead to the same diplomas as on campus study. The choice of courses from the TV universities is narrower but now expanding outside the original offerings of science and technology. A satellite TV teacher's college opened in 1986 (Jianshu 1987).

The *technology* of correspondence teaching in China parallels that used in the USSR. Face to face contact accounts for about 30% of the total time that the student devotes to the five components of each course: independent study; lectures; submission of assignments; tests; examination and thesis. Because of the importance attached to staff student contact the staffing ratios, at one full time academic per 25-40 students are high compared to systems based purely on independent study.

China is pleased with the *results* of its HDE and seeks to expand provision. Strong emphasis is placed on the quality of management as the determinant of future success. This is the major motivation behind cooperative projects with other countries. It is proposed (Jianshu 1987), that all institutions offering correspondence courses should have a vice president for correspondence education. In the TV universities there is awareness of the need to improve text materials and their links with the TV programmes. The independent thinking required by the present TV university format is seen as an advantage, however, in a country now trying to break a tradition of rote learning in its educational system. The new policy of encouraging personal initiative will likely give HDE an even better image. Some institutions, such as the Shanghai TV University, would like to put greater emphasis on part time learners and short cycle programmes if the current emphasis on full time students can be reduced.

Thailand

Thailand has created the most widely admired HDE institution after the UK Open University. Sukhothai Thammathirat Open University (STOU) was founded in 1978 and admitted its first students in 1980. As Carr (1984) notes: "its presentation of such varied programmes so quickly is impressive by any standards". For its *objectives* STOU "holds to the principle of lifelong education, aims at improving the quality of life for the general public, seeks to increase the educational qualifications of working people, and strives to expand educational opportunities for secondary school graduates in response to the needs of individuals and society" (Srisa-an 1984). The University is also charged with preserving and developing national culture and has already made a significant contribution in this area by increasing the quality and variety of books in the Thai language.

The *clientele* of STOU consisted of some 200,000 students in 1983 and is expanding to a target of 0.5m by 1990. Students have either,

(i) 12 years of schooling, or
(ii) 10 years of schooling plus 5 years work experience, or
(iii) a degree or diploma.

Most students are in the 26-30 age group and government employees are much the largest occupational group. Males slightly outnumber females and the regional distribution of students is close to that of the population at large. STOU's *programmes* focus on professional and vocational training in education, management, science, law, economics, health science, home economics, agricultural extension, cooperation, politics and communication arts. There are also extensive professional development programmes with bodies such as the national police department. The target is 400 courses, 100 of which were available in 1983. Delivery *technology* is based on quality correspondence texts with audio cassettes, radio and TV broadcast "unopposed" in prime time on the national channel. State of the art TV facilities are part of STOU's new campus north of Bangkok. The campus also includes residential accommodation since all students must attend 4-5 day intensive workshops during their studies.

The *results* of the first years of STOU's experience are impressive. A large enterprise that is well integrated with the existing educational infrastructure has been built up quickly. Drop out rates are modest at around 25% and the pass rates of 80% are high. Perhaps the most encouraging fact of all is that STOU can foresee the time when student fees alone will cover the operating budget and government support will not be necessary. Just as the success of the UK Open University owed much to the leadership of its founding head, Walter Perry, so STOU's success reflects the dedication and brilliant administration of its founder, Wichit Srisa-an.

Vietnam

Vietnam has awarded 50,000 degrees by distance education since 1960. The focus now is on the in-service training of workers, 30,000 of whom are enrolled in distance courses offered by 30 conventional institutions. The combination of correspondence tuition and face to face contact in local centres recalls the Soviet distance education model. The most pressing problem for HDE in Vietnam is shortages of paper and equipment (Unesco 1983).

Japan

Japan kept the world waiting for 16 years, from 1969 to 1985, while it planned and designed its University of the Air. Separate from the existing correspondence provision of Japanese universities, this new institution was established in 1985 to offer liberal arts programmes in domestic sciences. These are 4 year programmes aimed at both adult students and high school graduates. The students' weekly commitment of approximately ten hours is divided between TV (3 hrs), written materials (4-5 hours) and attendance at study centres (3 hours) (Yabe 1983).

South Korea

South Korea set up a correspondence college within Seoul National University in 1972 to provide a 2 year programme to those who failed the national university entrance examina-

tion. Despite a drop out rate of 70% it was highly cost effective and its graduates had a very high success rate in entry to the upper years of conventional university programmes. This college became the Korea Correspondence University in 1982 and now enrols some 250,000 students in 5 year programmes in 13 subject areas. Admission is by lottery among high school graduates. The instructional strategy includes printed materials, assignments, radio programmes, a student newspaper, and two weeks of lectures per year at local centres associated with conventional universities (Kem 1983).

Hong Kong

In relation to its population, the capacity of the universities, colleges and polytechnics providing CHE in Hong Kong is small. For this reason it is the country with the highest number of its citizens studying overseas (50,000+). Legislation has hitherto prevented the emergence of local HDE providers to satisfy the high demand for university study.

The largest provider of HDE in Hong Kong is the Open College of the University of East Asia. This college is the most interesting collaborative venture in distance education in the world. According to Swift (1986):

> Our college is unashamedly parasitical. We offer English language degrees using almost entirely imported courses. We teach them in the same way and at the same level as in the originating institution and we examine them at the same level by using external examiners (and often the examinations) from that institution.

Planning for the college began in 1981, students were enrolled in 1982 and the first graduates appeared in 1986. The college already breaks even on student fees alone (HK$40,000 for a 3 year degree) at an enrolment of 1,000 full time equivalent students. As enrolments increase and the college benefits from economies of scale its performance will improve even further. Already in the 5 years of its existence withdrawal rates have decreased sharply while pass rates have increased.

Swift's account of the strategy of the Open College is required reading for anyone interested in maximizing the benefits of international cooperation in distance education. He addresses such issues as contract negotiation with other institutions, the possibility of cultural imperialism, governmental hostility to distance education, and the opportunities of cloning the open college concept.

India

Faced with a huge unsatisfied demand for higher education and the problems existing in its external examination system (a "challenge" examination arrangement), India turned to HDE with the creation of the correspondence institute of the University of Delhi in 1962. Although the original intent was to create only one such institute per state and to limit enrolment in each to 10,000, they proliferated to the extent that 20% of India's 133 universities now have correspondence institutes. Paul (1983), describes one such institute and Datt (1982), gives a profile of Indian correspondence students. The *results* of this move to HDE disappointed the Indian authorities. The *clientele* is only 115,000, *programmes* are mostly limited to arts and commerce, and the *technology* used rarely goes beyond printed materials of inferior quality with occasional use of radio and study centres. Reddy (1984), lists the reasons why the correspondence institutes do not enjoy high credibility and sets the stage for the latest development in HDE in India.

This development is the creation of stand alone open universities intended to bring to Indian HDE the seriousness of purpose and professional competence that is lacking in the correspondence institutes. Carr (1983), describes the background to the establishment of the Andhra Pradesh Open University in 1982 and Singh (1986) reports on the creation, in 1985, of the Indira Gandhi National Open University (IGNOU). This will be the keystone of a national system of Indian open universities. Furthermore, the legislation creating IGNOU also gives it a coordinating role for HDE throughout India. This signals the determinatin of Indian governments to use HDE more effectively. It is already clear that IGNOU and the state open universities will be seeking the cooperation of other countries as they rise to the challenge of providing education to millions of people.

Pakistan

Pakistan has concentrated its investment in HDE in the Allama Iqbal Open University (AIOU), created in 1974 as "a People's Open University ... to provide part time educational facilities through correspondence courses, tutorials, seminars, workshops, laboratories, television and radio broadcasts and other mass communications media". AIOU's *clientele* is defined as "the masses" and degree work is intended to be only a small part of its *programming*. In 1983, about half the 65,000 students were enrolled in degree courses. There is a strong emphasis on teacher education and some 60,000 teachers, out of a potential market of 160,000, had taken the AIOU primary teachers orientation course by 1982. The other main focus has been general education at the junior college level (Fleming 1982). The *technology* used by AIOU consists of printed books, plus radio and television broadcasts. Tutorial support in some 150 study centres is given for certificate courses.

After a rapid start and promising early *results* AIOU is experiencing some financial dificulties and suffering from the shortcomings of the country's communications infrastructure. The acquisition of its own printing press was an important step in reducing delays in the delivery of materials to students (Unesco 1983).

Israel

Israel created Everyman's University in 1976. It now enrols about 10,000 students in 115 courses (Shatzman, 1984) and has been judged a cost effective contribution to the country's system of higher education (Melmed et al, 1982).

Arab World

The al-Quds Open University has been established to serve the needs of the Arab region, notably *Jordan*, *Lebanon* and the *Syrian Arab Republic*.

The South Pacific and Australisia

The Pacific Islands

In this region one talks not of the number of universities in the country, but of the number of countries in the university. From its main campus in Fiji, the University of the South Pacific (USP), serves eleven countries: Cook Islands, Fiji, Kiribati, Nauru, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Western Samoa. HDE is a *sine qua non* for serving

such a territory. Gillard and Williams (1986), describe how USP has risen to the challenge of serving the diverse student body distributed over an area of ocean the size of Australia. The *technology* is essentially based on printed study material but interesting use has been made of satellite tutorials. Although only 5% of students actually used this service, which was limited to a total of 300 hours per year, the existence of this possibility of dialogue is believed to be psychologically important. The satellite used (ATS-1) having ceased service, USP is seeking time on other satellites.

New Zealand

New Zealand has a long tradition of distance education since its population is dispersed throughout the two largest islands where travel is slow because of the mountainous terrain in much of the country. There is one major provider of distance education at each level: the Correspondence School for elementary and secondary students; the Technical Correspondence Institute for postsecondary technical education; and Massey University for university level work. Although there had long been provision for extramural students to enrol in degree programmes without attending classes, HDE in New Zealand was formalized by the creation of Massey's Centre of Extramural Studies in 1960 (Owens 1985). From 500 students in 4 first year BA units in that year, the operation has grown until by 1984 over 10,000 students select from more than 300 undergraduate and graduate courses for 8 degrees, 18 diplomas and 3 certificates. The *technology* is that of correspondence with 2-5 day vacation courses on campus and some possibilities of local group study organized by the very active Extramural Students Society. Massey University also has full time on campus students in lesser numbers and faculty and curricula are the same for internal and extramural students. The *results* show a steadily improving HDE system with a drop out rate of less than 20%, a clientele of which less than one quarter are teachers, and with increasing emphasis on technical and scientific subjects.

More recently Massey's work has been complemented by an initiative of the University of Otago in Dunedin (South Island) which has set up a national teleconference network that will be used for programmes in dentistry, humanities, social work, wildlife management, and continuing medical education.

Australia

If the organization of HDE in New Zealand is simple and logical, a sharp contrast is to be found in neighbouring Australia. Appropriately enough, the latest book on HDE in Australia is entitled *Diversity Down Under* (ASPESA 1985). Between 1971 and 1981, the proportion of students in HDE rose from 6.8% to 9.3% in the universities and from 2% to 14.2% in the Colleges of Advanced Education (CAE). In the two systems together there are now over 40,000 HDE students. White (1982), traces the history of HDE in Australia, Mitchell (1986) gives the example of one state and Gough (1983) highlights the problem of proliferation of institutions providing HDE. As well as the 5 universities and 9 CAEs that account for most of the enrolments, another 7 universities and 12 CAEs have offered some courses in recent years.

The *objectives* of HDE have evolved from "access" to "equivalence" and "excellence" in recent years according to Gough (ASPESA 1985). The Australian government sees the provison of HDE as important because of the trend to life long recurrent education, an ageing population, the increasing expectations of women, and a more competitive labour market. In recent years Australia's HDE *clientele* has become older, more female, and more urban. The *programmes* offered cover a wide range of subjects. *Technology* is based on

correspondence and audio materials with strong emphasis on residential schools at some institutions. Australia is proud of its "dual mode" tradition whereby the same faculty teach CHE and HDE students. The AUSSAT satellite launched in 1985 will be used by HDE in the years ahead (Livingson 1984). The *results* of the Australian experience are a vibrant HDE sector which, perhaps because of its diversity and competitiveness, has contributed much to the international HDE literative. The lack of coordination among providers is the problem most frequently identified.

Africa

No continent has a greater need for distance education than Africa (Ansere 1982) but nowhere is there a greater gap between need and supply. Apart from the *University of South Africa*, which has expanded to 60,000 students (of which 13,000 Blacks) since it began as the world's first open university in 1947 (Van As 1985), provision of HDE in Africa has lacked resources and continuity. A striking example of shattered hopes was the Open University of *Nigeria* which was closed down for economic reasons almost as soon as it began (Omolewa 1984, Oduaran 1985). While the greatest need for distance education in Africa is at the secondary and technical/vocational levels, a need which universities have been helping to meet (e.g. in *Kenya* see Gitau 1984, 1986), there is also considerable scope for HDE and some successful programmes such as the Correspondence and Open Studies Institute of the University of Lagos, *Nigeria* with an enrolment of 5,000 (Olusanya 1984). *Zambia* offers university level correspondence courses with some radio to 600 students (Siaciwena 1984) but teacher education and upgrading have been the nearest thing to university level work attempted on any scale in most African countries. Gitau (1986), describes *Kenya's* programmes for teachers and their cost effectiveness has been assessed positively by the World Bank (Hawkridge 1982). Holmberg (1985), notes how these efforts suffer from "a constant lack of material resources and funds" with "new activities virtually smothering older ones" all too often.

On the positive side, however, a significant cadre of distance education workers have been trained in Africa in recent years and 29 African agencies active in distance education at some level responded to a recent survey conducted for the Commonwealth Secretariat (IEC/CET 1987). With more resources and some international help HDE could grow significantly in Africa in the years ahead.

Latin America

HDE in Latin America presents a fascinating study. Nowhere is the enthusiasm for distance education greater. New projects, such as the *Colombia* open and distance education system are described with missionary fervour and an abundance of organizational and planning charts (Gomez 1984). The Associacion Iberoamericana de Educacion Superior a Distancia publishes a bulletin that reports on developments in a number of countries. These have included operations within conventional universities such as the Universidad Abierta of Unam in *Mexico*, the Universidad de Antioquia and the Universidad Javeriana in *Colombia*, and the Centro de Teleducacion of the Universidad Catolica of Lima, *Peru*. Anderson (1982), suggests that some 50 Latin American universities have made serious attempts to offer distance education but that "like grassfires on the savannahs" most of these initiatives have been short lived. In *Jamaica*, the University of the West Indies has initiated an extensive distance education to serve the Caribbean area.

Two universities designed solely for HDE, *Venezuela's* Universidad Nacional Abierta (UNA) and *Costa Rica's* Universidad Estatal de Educacion a Distancia (UNED) have been described in detail by Yepez (1984) and Trejos (1984). Rumble (1982, 1985), has written

about the evolution of both institutions. He finds that Latin American HDE initiatives suffer from *proyectismo*, "the elaboration of ambitious plans out of all proportion to the resources available to implement them". Furthermore, there are often unrealistic expectations that the introduction of the technology of distance education will remove undesirable features of the CHE system. In the words of Tedesco (1983):

> There is ... a frequently encountered fallacy in literature on the subject that attributes the antidemocratic, rigid and traditionalist characteristics of the formal education system to its technical aspects; it is thereupon assumed that by changing the technology, these characteristics can be eliminated. This kind of technocratic utopia has been rapidly refuted by the facts, and it is becoming increasingly clear that there is no reason to suppose that the objectives that the traditional system fails to achieve could be attained using new educational practices, if the variables which define the social context remain unchanged.

Rumble concludes that the locus of HDE development in Latin America may move to the private universities since they do not have the organizational traditions, political ebullience and lack of funds that have hampered developments in the public universities.

North America

North America is dominated by two federal countries, *Canada* and the *USA*. Their national governments have little jurisdiction in educational matters and in neither case have they played any role in the development of HDE. This is almost as true of the provincial and state governments, which do have authority in educational matters but have usually left HDE initiatives to existing institutions. Exceptions are British Columbia, which set up the Open Learning Institute and the Knowledge Network, and more recently Ontario, which has established a Northern Ontario Distance Education Access Network. Against this background the distinguishing feature of HDE in North America is its very diversity. Institutional free enterprise has given rise to hundreds of *programmes* serving an array of *objectives* and using various *technologies*. For the *USA*, Markowitz (1983), reports 70 universities offering college level credit courses to some 150,000 students. His survey shows that the typical programme is located at a Mid Western university, had 2,055 college level correspondence enrolments in 1981-1982, and had a full time staff of seven and one half persons with all faculty teaching on an overload basis. Feasley (1983), has given an excellent account of programme practices in the light of worldwide trends in distance education. Other HDE projects of note in the USA are Empire State College (Granger 1986) which has *objectives* of changing methods and content as well as improving access, and the Educational Telephone Network of the University of Wisconsin (Thompson 1984) which was the first major application of teleconferencing in HDE. McNeil and Wall (1984), provide an interesting account of the University of Mid America, an HDE project that was discontinued in 1982. *Canada* also has a number of conventional universities that offer correspondence courses, for example Waterloo which has the largest English language programme (300 courses, 20,000 students) and Laurentian which offers courses in both languages. Much recent focus has been on newer institutions established exclusively for HDE such as the Télé-Université (Madden 1984), Athabasca University (Griew 1984), The Open Learning Institute and the Knowledge Network. Like Australia, Canada has generated a literature of distance education that is disproportionate to its size. Recent books in English (Mugridge and Kaufman 1986) and French (Henri and Kaye 1985) are good examples. English Canadians agonize over the use of electronic communications in distance education, French Canadians, who mourn the loss of a somewhat idealized teacher student relationship, stress the importance of *l'encadrement*.

EUROPE

Although distance education is a century-old tradition in several European countries, its use at the university level is, in general, much more recent. For example, *Sweden* has known distance education for 150 years (Baath and Willen 1984) and it became a major component of the educational system after the establishment of Hermods in 1898. By the mid 1960s, the proportion of Swedes learning at a distance may have been the largest in the world and correspondence education had high credibility. Apart, however, from a few university courses offered by Liber Hermods it was not until 1974 that significant HDE began. By this time correspondence education was in decline in Sweden as a whole because the state began providing increased opportunities for face to face adult education. Willen (1983) says that HDE in Swedish universities began with little awareness of experience in other countries. It is based on the Australian model: responsibility for HDE is devolved to the department level within a number of universities. In Sweden as a whole some 9,000 students are enrolled in 300 courses. They appear to be very satisfied with the mix of print, audio cassettes and telephone tutorials.

Norway shows an even sharper contrast between the blossoming of non university distance education - extensively reported in the literature - and the paucity of reports of HDE. Here, as in *Finland* where some 4,000 are involved in HDE (Hawkridge, 1984), existing universities are now cooperating to provide distance education courses in a range of subjects using print and audio *technology* with some broadcasting.

Conventional universities have also been responsible for HDE in *France* where Centres de Tele-enseignement Universitaire in 18 universities offer courses to some 20,000 students (Lefranc, 1985). This development began in 1964 with the offering of the first two years of some university programmes for the benefit of elementary school teachers. Today, HDE curricula are expanding into the 3rd and 4th years. Students must meet the normal entry requirements and only 40% of them are over 21 years old, in contrast to the average age of the HDE *clientele* in most countries. The *technology* used is based on radio and audio cassettes with correspondence support. Arnaud (1984), describes the operation of French HDE at a university in the city of Toulouse.

Other European countries, notably *Britain*, *West Germany*, *Spain* and, most recently, *Holland*, have opted to provide HDE by creating special institutions. In *Britain*, HDE goes back to the establishment of the University of London external examination system in 1858. A century later the creation of the UK Open University (UKOU) attracted worldwide attention and its success has been extensively reported (for a brief summary see Harry, 1982). The *objectives* of the UKOU are to be open as to people, geographical location, methods and ideas. It now enrols some 80,000 students in undergraduate and associate courses using a rich multi media teaching system that includes, in addition to its basis of correspondence texts, TV and radio broadcasting, experimental kits, telephone tutorials and a network of local study centres. In contrast to the highly organized and centralized structure of the UKOU is the Open Tech (Tolley, 1983; Freeman, 1986), a complex venture involving the provision of 7,000 open learning packages by 300 producers through over 150 college centres. The growth of the Open Tech is especially interesting in view of the comment by Perry (1976), the founder of the UKOU, that although the greatest need for distance education in *Britain* might well have been at the pre university level when the UKOU was set up, an open university had to be created first in order to establish the credibility of distance teaching systems.

In *West Germany* a strong tradition of pre university correspondence teaching had little impact on higher education until the creation in 1966 of Deutsches Institute fur Fernstudien (DIFF) (Rebel, 1983) which develops in service courses that are offered to teachers

through cooperating institutions. In 1974, the state of North Rhine Westphalia created the Fernuniversitat (Bartels, 1984, 1985; Keegan 1982) to relieve pressure on existing universities. This institution, while operating at a distance, follows as closely as possible the curriculum and academic practices of CHE in *West Germany*. It enrols some 35,000 students.

Legislation to create a national distance education university (UNED) was passed in *Spain* in 1970. Later legislation aimed at decentralizing the administration of conventional Spanish universities has now left UNED in the advantageous position of being the only national university (Popa-Lisseanu, 1985). It enrols some 90,000 students (average age around 30) and its graduates have high credibility with employers. The *technology* used is print supported by some radio or audio cassettes. There is a network of 52 study centres in conventional institutions throughout Spain.

Finally, the Open University of *Holland* began operations in 1984 (van Eesteren-Smith, 1984; van Enckevort, 1985). Applications exceeded sceptics' expectations and enrolments in the first year had to be limited to a quota of 15,000. The University was particularly surprised by the strength of the demand for courses in law. In 1985, the Dutch Open University admitted 1,000 Dutch speaking Belgian students.

Trends and Typology

What conclusions can be drawn from this summary of developments in HDE around the world? A first observation is that the extent to which countries write about their HDE activities in the international literature seems to be inversely proportional to the numbers of students involved. Adding together the student enrolments listed in our country by country survey, which was by no means exhaustive, produces a total of nearly 4m. Although only four contries (USSR, China, South Korea and Thailand) account for 3m of these, nearly all the international writing about HDE comes from the larger number of countries that make up the remaining 1m enrolments. This means that generalizations about HDE made on the basis of the readily available scholarly literature will only apply to a minority of the world's HDE students. Furthermore, in most countries, there seems to be remarkably little communication between the HDE sector and providers of distance education at the non university level. An extreme example is Norway, whose non university distance education is the subject of frequent articles in international journals, whereas information on Norwegian HDE is hard to find. Therefore generalizations about a country's HDE sector based on information about its non university sector are also likely to be in error.

Our world survey focused on *objectives*, *clientele*, *programmes*, *technologies* and *results*. We shall use these headings in identifying trends and types.

Objectives

Most HDE is not "open learning". The biggest systems are there to expand the number of university places for 18-24 year olds and have similar admission requirements to those of CHE. While the link between HDE and state manpower planning is strongest in the USSR, the link is also there wherever HDE development is driven by governments. Provision of HDE with the objective of expanding learning opportunities for older students is a less widespread phenomenon found in pluralistic societies. Even in these cases governments usually established open universities from a belief in human capital theory. Although the world recession of the early 1980s shook many widely held assumptions about the factors responsible for economic growth, the correlation between HDE and national prosperity seems to have been strengthened by recent OECD studies showing two important predic-

tors of economic growth: the proportion of youths staying in full time education beyond the school leaving age and the proportion of 20-30 year olds returning to part time postsecondary education while working.

Another significant trend is the use of HDE systems in national cultural and linguistic development. As major producers of print materials these institutions have a special role in maintaining and enhancing local languages. Examples are Korea, Thailand, French Canada, Holland (and Flemish Belgium), and Israel.

Clientele

The profiles of the students in HDE vary from country to country along with the objectives. The age distribution of HDE students worldwide would be a bimodal curve with a major peak at around age 20 (USSR, China) and a lesser peak near age 30 (the open universities and dual mode correspondence programmes). In some cases (e.g. the education of women), the objectives of HDE may run counter to national traditions and the match between the actual student profile and the aim of the system may take years to achieve.

Programmes

The advantages of state involvement and/or large systems (they usually go together) are seen most clearly in the breadth of programmes they make possible. Where HDE is provided in an uncoordinated manner by many dual mode institutions (e.g. Australia, India) the main criticism is of an excessive choice of arts/social science courses and a lack of science/technology courses. However, programme breadth in HDE is expanding in nearly all countries and there has been a most encouraging multiplication of technical/vocational courses at the non university level in the industrial countries. There remains considerable need for such courses, as well as for programmes in rural development, in the less developed countries (IEC/CET, 1987).

Technology

Early in this decade Bates (1982), surprised many with his finding that the use of broadcast television was on the decline in HDE. Our review confirms that with a few exceptions, such as China's RTVU, the technology of HDE in the 1980s is overwhelmingly print and audio. Even RTVU intends to make more use of correspondence materials when it can afford them. Print is, of course, an extremely flexible medium which has become even more attractive to institutions with the growth in sophistication of desktop publishing systems using microcomputers. Furthermore, experience with newer media seems to have confirmed the central role or the printed word in university study. Recent analyses of the nature of television (Postman, 1985) and computers (Roszak, 1986), indicate that they are far from having the range of print as a vehicle for reasoned argument and the exploration of knowledge. Bates (1982), drew attention to the excellent instructional qualities of audio cassettes from the standpoints of both teacher and learner.

Results

Both individual countries and international organizations such as the World Bank appear satisfied with the results of investment in HDE. As enrolments have increased, so the cost effectiveness of systems has increased too. Furthermore, HDE usually has a commitment to formative evaluation and research on its own performance that is not found in CHE. This

means that most HDE programmes have, at the very least, an impressive array of statistics about their operation and can often be shown to be self improving systems. Employers appreciate the independent work habits that distance students must develop. Even the independence of thought that goes with independent study is now seen as a virtue in societies that wish to break a tradition of rote learning.

Typology

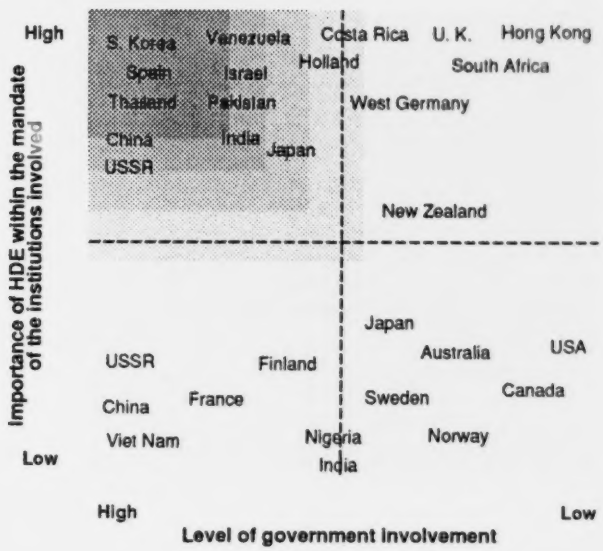
Keegan and Rumble (1982), have reviewed a number of attempts to develop typologies of HDE systems. Their weakness is to concentrate too much on institutional status and not enough on the relationship of the HDE programme to government. Furthermore, since HDE systems are in rapid evolution, any given system is likely to move out of any category that is too narrowly defined. A typology in four categories is sufficient to capture the main distinctions between systems. These categories relate first to the role of government (strong or weak) and second to the centrality of HDE to the institution's mandate (main function, secondary function). Figure 1 is an attempt to represent in terms of this typology some of the HDE systems referred to in this article.

PART II

Cooperation in Higher Distance Education

The ultimate aim of cooperation in HDE should be to give students the benefit of better courses or a wider range of courses. While this will usually imply cooperation between institutions already active in HDE it may also be advantageous to involve institutions that are not yet active. Already much HDE is provided by dual mode institutions for which HDE is a sideline to the main activity of classroom teaching. Much of the expert knowledge needed to expand HDE into subject areas where there are few courses (e.g. agriculture, health, rural development), lies in institutions that do not yet teach at a distance. How can they be attracted into the field?

FIGURE 1. HDE systems in various countries



Cooperation at the national level

The glamour associated with international collaborative projects and the aid funds available may well make cooperation between countries easier to initiate than cooperation within a particular jurisdiction. Nevertheless, each government would also like to see HDE providers within its own country cooperating sufficiently to ensure that a good range of programmes is available and undue duplication is avoided. In theory this is easy where governments control universities directly and difficult where they do not. One way for governments to encourage networking and the expansion of HDE offerings is to provide a common resource that all institutions can use to deliver courses and programmes, as well as some funding for the development of new courses. Examples are the Knowledge Network in British Columbia, Canada, where government made a satellite available to institutions, and the Northern Ontario Distance Education Access Network where a network of 40 well equipped study centres has been established for use by any institution.

International associations

A collaborataive project usually starts with people from different institutions recognising a common interest. These initial contacts often occur at meetings of professional associations. In the field of distance education the following associations are active.

Worldwide

The International Council for Distance Education (ICDE) has over 500 individual and institutional members from 50 countries. It holds a world conference every 3 years (the next will be held in Oslo, Norway in 1988), publishes the *ICDE Bulletin*, promotes research and maintains a number of interest groups. (Address: 12439-52 Avenue, Edmonton, Alberta, Canada, T6H OP5)

Regional

- The Association Iberoamericana de Educacion Superior a Distancia links HDE institutions in Spain and Latin America. It publishes a regular *Boletin Informativo* and holds conferences. (Address: UNED, Apartado de Correos 50.487, Madrid, Spain).

- The Australian and South Pacific External Studies Association (ASPESA) organizes biennial conferences and smaller workshops as well as publishing the journal *Distance Education*. One of its aims is to foster joint ventures between its members. (Address: c/- B. Scriven, Brisbane College of Advanced Education, Brisbane, Australia).

- The newly created Association of European Correspondence Schools has non university education as its major focus. It offers by correspondence a diploma in correspondence education (Campbell, 1984).

A number of other regional associations have a sporadic existence. Among them are the African Association for Distance Education and the Distance Education Council of Asia.

National

Few national associations have permanent staff, so their level of activity varies over time. Countries whose distance education associations do have a permanent secretariat are: Argentina, Brazil, Canada, New Zealand, Norway, Sweden, the United Kingdom, and the United States. Most of these associations have a formal link with ICDE.

Intergovernmental agencies

A number of intergovernmental bodies have been impressed by the potential contribution of HDE to economic and social development and encourage collaboration ventures. Among them are:

Unesco. This UN body has had a long association with correspondence and distance education and has sponsored numerous conferences. The activities of the Unesco Regional Office for Education in Asia and the Pacific (ROEAP, Bangkok) and notably those of its Regional Cooperative Programme in Higher Education for Development, clearly reflect the rapid growth of HDE in the Asia/Pacific region. Unesco is currently studying a proposal for an International Institute of Technology that would use distance methods.

UNU. The United Nations University provides some financial support to the International Centre for Distance Learning which runs a world documentation centre and data bank on distance education institutions from the campus of the UKOU in Britain. There is a proposal to make this data base a distributed network linked to a number of regional resource centres.

The World Bank. The Bank has conducted a number of studies on the cost effectiveness of distance education and must have liked the results since it has supported distance education initiatives in various countries (Perraton, 1982).

La Francophonie. The "Commonwealth" of French speaking countries is showing interest in distance education as a focus for a multilateral initiative between member countries. Action may be taken at the Francophone summit to be held in September 1987.

The Commonwealth. Interest in international initiatives in HDE was sparked within the Commonwealth by the decline of student mobility between countries. Its secretariat has been asked to produce a proposal for collaborative ventures in distance education for presentation to Ministers of Education in June 1987 and to the Commonwealth summit in October 1987. The proposal will likely involve the creation of a facilitating agency networked to regional centres on each continent.

National agencies for international aid

Most collaborative ventures in HDE have been sponsored by the international aid agencies of the industrialized countries. Three examples among many are: U.S. assistance in the creation of a distance university in Indonesia; Canadian assistance for the development of HDE in science in Malaysia; and British assistance to the Sri Lanka Open University. While much good is accomplished through these bilateral arrangements they are not a good means of promoting the regional cooperation between less developed countries that could be most helpful. This explains the interest in multilateral mechanisms such as the proposed Commonwealth initiative.

Institutional Initiatives

A recent survey of distance education in the Commonwealth made the surprising finding that most institutions would allow people to enrol from other countries although few take up the opportunity (IEC/CET, 1987). Similarly most institutions already make course materials available to foreign institutions for sale or exchange, although little traffic of this kind takes place either. As a result of their survey these authors have ranked various forms of collaboration in terms of the risks and the benefits they are likely to present. This scale is reproduced as figure 2.

An example of an institution that has accepted a high level of risk but looks set to derive substantial benefits is the Open College of the Universtiy of East Asia. This college took the initiative of building a programme based on courses from other countries and working out the credit transfer and external examination arrangements necessary. Its success shows that sheer institutional willpower is probably the most important ingredient in any collaborative venture.

Conclusion

Part 1 of this paper reviewed the tremendous diversity of HDE around the world. Rapid growth is still taking place in Asia, while Europe, North America and Australia now have successful and stable HDE systems.

In Africa and Latin America both losses and gains are being registered in a dynamic situation. When the world's HDE systems are characterized by institutional type and government involvement some interesting parallels between developed and less developed countries are shown.

Part 11 reviews the various mechanisms that can assist institutions to develop HDE through international collaborative ventures. The next few years will likely see a strengthening of these mechanisms, notably those involving intergovernmental agencies.

FIGURE 2: Risks and benefits of collaboration

(IEC/CET, 1987)

Low Risk		Modest Benefits
	• Sharing information	
	• Exchanging experience	
	• Exchanging advisers and consultants	
	• Collaborative staff training	
	• Accepting each other's students	
	• Acquiring and/or exchanging external materials	
	• Collaborating on evaluating external materials	
	• Collaborating on adaptation of materials	
	• Cooperating on development of related course units	
	• Establishing credit transfer arrangements	
	• Creating a common open learning system	
High Risks		Major Benefits

References

Anderson, P.S. (1982)
The Fires of Distance Education in Latin America in Daniel, J.S. et al. (eds.)
Learning at a Distance - A World Perspective
Athabasca University/ICCE, pp.70-72

Ansere, J.K. (1982)
The Inevitability of Distance Education in Africa in Daniel, J.S. et al. (eds.)
Learning at a Distance - A World perspective,
Athabasca University/ICCE, pp. 53-61

Arnaud, E. (1984)
La problematique de L'ensignement a distance dans une universite traditionnelle, in *Evaluation of Higher Distance Education Results,*
Madrid: UNED, pp.63-72

ASPESA (1985)
Diversity Down Under
Toowoomba, Australia: Darling Downs Institute Press

Baath, J.A. and Willen, B. (1984)
150 years of Distance Education in Sweden
ICDE Bulletin 4, pp.26-32

Bartels, J. (1984)
The Fernuniversitat of the Federal Republic of Germany in *Evaluation of Higher Distance Education Results*, UNED
Madrid, pp.501-524

Bartels, J. (1985)
Study Experiences of Graduates and Drop-outs a the Fernuniversitat
IDCE Bulletin 7, pp.39-48

Bates, A.W. (1982)
Trends in the Use of Audio-Visual Media in Distance Education Systems, in Daniel J.S. et al. (eds.)
Learning at a Distance - A World Perspective
Athabasca University/ICCE, pp.8-15

Campbell, I. (1984)
A Correspondence Course for Correspondence Educators
ICDE Bulletin 6, pp.44-48.

Carr, R.J. (1983)
Correspondence education in Indian universities: a change of direction
Distance Education 4(2), pp.187-194

Carr, R.J. (1984)
Thailand's Open University, *ICDE Bulletin* 5, pp.25-27

Datt, R. (1982)
Problems of Distance Education in Developing Countries in Daniel, J.S. et al. (eds.)
Learning at a Distance - A World Perspective
Athabasca University/ICCE, pp.63-65

Feasley, C.E. (1983)
Serving Learners at a Distance: A Guide to program Practices
ASHE-ERIC Higher Education Report No.5
Washington, D.C.: Association for the Study of Higher Education

Fleming, A. (1982)
The Allama Iqbal Open Univerity, Pakistan, in Rumble, G. and Harry, K. (eds.)
The Distance Teaching Universities
Croom Helm/St. Martin's, pp.122-146.

Freeman, R. (1986)
MARIS-NET
ICDE Bulletin 12, pp.50-52

Gillard, G.M. and Williams, A.I. (1986)
Satellite and Kerosene lamp:
Distance Education at the University of the South Pacific
ICDE Bulletin 12, pp.57-61

Gitau, B. (1984)
Counselling at a Distance: The Experience of Kenya's Correspondence Course Unit
ICDE Bulletin 6, pp.32-41

Gitau, B. (1986)
A Case Study of the School of Distance Studies of the University of Nairobi, Kenya
ICDE Bulletin 11, pp.59-68

Gomez, H.S. (1984)
Sistema de educacion abierta y a distancia: el modelo colombiano, in *Evaluation of Higher Distance Education Results*
UNED, Madrid, pp.123-167

Gough, E. (1983)
Distance Education: A Brief Note on the Rationalization of the Tertiary Sector in Australia
ICDE Bulletin 2, pp.16-18

Granger, D. (1986)
Empire State College's Tradition of Innovation:
The Centre for Distance Learning
ICDE Bulletin 10, pp.24-29

Griew, S. (1984)
Access and Opportunity: Social Criteria in the Evaluation
of Distance Education, in
Evaluation of Higher Distance Education Results
UNED, Madrid, pp.29-34

Harry, K. (1982)
The Open University, United Kingdom in Rumble, G. and Harry, K. (eds.)
The Distance Teaching Universities
Croom Helm/St.Martin's, pp.167-186

Hawkridge, D. (1984)
Open Higher Education in Finland
Teaching at a Distance 25, p.111

Hawkridge, D. et al (1982)
In-service Teacher Education in Kenya in *Alternative Routes to Formal Education*
World Bank/Johns Hopkins

Henri, F. and Kaye, A. (1985)
Le Savoir a Domicile
Presses de l'Universite du Quebec

Holmberg, B. (1985)
Applications of distance Education in Kenya
Distance Education 6(2), pp.242-247

Holmberg, B. and Keegan, D. (1984)
Conference on Independent Study at Leipzig
ICDE Bulletin 6, pp.14-15

IEC/CET (1987)
Commonwealth Cooperation in Open Learning
Commonwealth Secretariat, London

Ilyin, V.V. (1983)
The U.S.S.R. Financial and Economic Institute for Distance Education
Distance Education 4(2), pp.142-148

Jedrzycki, W. (1984)
The proposed open university in Poland
Teaching at a Distance 25, pp.40-44.

Jianshu, Z. (1986)
News from China
ICDE Bulletin 11, pp.23-25.

Jianshu, Z. (1987)
Three major events in higher distance education:
News from China
ICDE Bulletin 13, pp.18-20

Keegan, D. (1982)
The Fernuniversitat, in Rumble, G. and Harry, K. (eds.)
The Distance Teaching Universities
Croom Helm/St. Martin's, pp.88-106

Keegan, D. and Rumble, G. (1982)
Distance Teaching at University Level in Rumble, G. and Harry, K. (eds.)
The Distance Teaching Universities
Croom Helm/St. Martin's, pp.15-31

Kim, S.H. (1983)
Current status of distance education in Korea
Distance Teaching in the Development of Lifelong Education
Korea Correspondence University, pp.191-209

Lefranc, R. (1985)
Centres de Tele-enseignement Universitaire, Ecole Normale Superieure de Saint-Cloud
ICDE Bulletin 7, pp.35-38

Livingston, K.T. (1984)
Satellite Communications and Teleducation in Australia
ICDE Bulletin 6, pp.54-57

Madden, M. (1984)
Reflexions sur la Tele-universite: Didactique et Pedagogie, in *Evaluation of Higher Distance Education Results*
UNED, Madrid, pp.35-61

Markowitz, H. (1983)
Independent study by correspondence in American universities
Distance Education 4(2), pp.147-170

Mattewson, C. (1985)
A National Teleconference Network, Its Possibilities and Applications
New Zealand Journal of Adult Learning 17(2), pp.9-13

McCormick, R. (1985)
The RTVU in China: the world's biggest learning system
ICDE Bulletin 9, pp.38-42

McNeil, D.R. and Wall, M.N. (1983)
The University of Mid-America: An Analytic Perspective
ICDE Bulletin 2, pp.34-41

Melmed, A.S. et al. (1982)
Everyman's University in Israel - The First Two years in *Alternative Routes to Formal Education*
World Bank/Johns Hopkins

Mitchell, I. (1986)
Distinctive Features of Distance Education in South Australia
ICDE Bulletin 10, pp.34-38

Mohle, H. (1983)
The Development of Creative Personalities through Independent Academic Work in Distance Education
ICDE Bulletin 2, pp.19-29

Mugridge, I and Kaufman, D. (1986)
Distance Education in Canada
Croom Helm, London

Oduaran, A.B. (1985)
Nigeria's National Open University: A Study in retrospect
ICDE Bulletin 8, pp.49-53

Olusanya, G.O. (1984)
Correspondence and Open Studies Institute 1976-1983
- An assessment, in
Evaluation of Higher Distance Education Results
UNED, Spain, pp.169-182

Omolewa, M. (1984)
Introducing the National Open University
ICDE Bulletin 6, pp.41-43

Owens, J.M.R. (1985)
Campus Beyond the Walls,
Dunmore Press, Palmerston North, New Zealand

Paul, R.C. (1983)
Correspondence Education - the Experience of a decade in Panjab University, Chandigarh
ICDE Bulletin, 3, pp.32-38

Perraton, H. (1982) (ed.)
Alternative Routes to Formal Education
World Bank/Johns Hopkins Press

Perry, W. (1976)
Open University: A Personal Account by the first Vice Chancellor
Milton Keynes: Open University Press

Popa-Lisseanu, D. (1985)
UNED: General Profile and Present Developments
ICDE Bulletin 9, pp.30-37.

Postman, N. (1985)
Amusing Ourselves to Death
Elizabeth Sifton Books, New York.

Rebel, K. (1983)
Distance Education in West Germany: the DIFF's conceptual contribution
Distance Education 4(2), pp.171-178

Reddy, R. (1984)
Distance teaching in India: A profile of Andhra Pradesh Open University in *Evaluation of Higher Distance Education Results*
UNED, Madrid, pp.283-305

Roszak, T. (1986)
The Cult of Information
Pantheon, New York

Rumble, G. (1982)
The cost analysis of learning at a distance: Venezuela's Universidad Nacional Abierta
Distance Education 3(1), pp.116-140

Rumble, G. (1985)
Distance education in Latin America: models for the 80s
Distance Education 6(2), pp.248-255

Shatzman, I. (1984)
Everyman's University: Original aims, Interim Results and New Projects in
Evaluation of Higher Distance Education Results
UNED, Spain, pp.259-282

Siaciwena, R.M.C. (1984)
Introducing Radio Broadcasts to support Correspondence Courses at the University of Zambia: Initial observations
ICDE Bulletin 4, pp.17-21

Singh, B. (1985)
International Seminar on "Distance Education: Experience of Open Universities",
ICDE Bulletin, 11, pp.35-41

Srisa-an, W. (1984)
The case of Sukhothai Thammathirat Open University of Thailand
Evaluation of higher Distance Education results
UNED, Madrid, pp.307-350

Swift, D.F. (1986)
The Global Village Realized?
Paper to the Open Learning Institute/Knowledge Network Conference
Vancouver, May 1986

Tedesco, J.C. (1983)
Trends and Prospects in the Development of Higher Education in Latin America and the Caribbean
Unesco, Paris, ref.ED-83/WS/75, p.27.

Thompson, G. (1984)
The Development of the Educational Telephone Network at the University of Wisconsin
ICDE Bulletin 5, pp.47-52

Tolley, G. (1983)
The Open Tech Programme
ICDE Bulletin 1, pp.43-47

Trejos, E.G. (1984) La UNED DE Costa Rica y su Desarrollo, in
Evaluation of Higher Distance Education Results,
UNED, Madrid, pp.73-97

Unesco (1983)
Distance Education in Higher Education
Bangkok, pp.7-21

van As, B.S. (1985)
Transitional study programmes at the distance teaching univeristy of South Africa: a continuing experiment
Distance Education 6(2), pp.223-234

van Eesteren-Smith, H.L. (1984)
The Netherlands Open University in the Starting Blocks
ICDE Bulletin 5, pp.18-24

van Enckevort, G. (1985)
The Dutch Open University Opened: an Unexpected Success
ICDE Bulletin 7, pp.28-34

White, M. (1982)
Distance education in Australian Higher Education - A History
Distance Education 3(2), pp.255-278

Willen, B. (1983)
Distance Education in Swedish Universities
Distance Education 4(2), pp.211-222

Yabe, A. (1983)
The University of the Air
The Role of Distance Teaching in the Development of Lifelong Education
Korea Correspondence University, pp.250-268

Yepez, M.R. (1984)
La organizacion, el curriculum y la production de cubos: aspectos criticos en una institucion abierta y a distancia, in *Evaluation of Higher Distance Education Results*
UNED, Madrid, pp.99-121

Yu, Xu (1986)
A look into some aspects of distance education in the People's Republic of China
Distance Education 7(1), pp.92-105

Media in Distance Education

A W Bates
The Open University
United Kingdom

Commonwealth Cooperation in Open Learning

Theme Paper 12

MEDIA IN DISTANCE EDUCATION

Prepared for the International Extension College/Council for Educational Technology

A W BATES

Professor of Educational MediaResearch
Institute of Technology
The Open University
Milton Keynes
United Kingdom

December, 1986
(revised)

(Reprinted with the permission of the Commonwealth Secretariat, London)

INTRODUCTION

It is now 20 years since Wilbur Schramm and his colleagues published their seminal "The New Media: Memo to Planners" (Schramm et al., 1967) which reviewed 23 case studies of the use of "new" media in education. The optimism of that document is still refreshing to read, but subsequent experience provides a more depressing picture. Most of the projects reviewed have long ago ceased to function. Some failed dismally. Others achieved considerable success, in educational terms, but were wound up because of lack of political support or more often simply because the money ran out. Some have been overtaken by newer and more exciting technology (see Lyle, 1982). As Schramm and his colleagues realised even then, the use of media is insufficient on its own to make a project successful.

Unfortunately, the failure of many media based projects has understandably led many planners to believe that for distance education, media (other than print) are an expensive luxury, best left alone (see, for instance, Samson, 1983). This assumption though is just as naive as the assumptions made over 20 years ago about the power of media to solve basic educational problems. Media do have a useful role to play in distance education. What is important is to be aware of their potential and their limitations, and even more so to understand the conditions that are necessary for their successful use. This paper tries to set out what is known from experience about the use of media in open and distance education, and in particular the conditions that must be met for their successful use in collaborative projects.

REVIEW OF EXPERIENCE

I will not attempt to provide a systematic and comprehensive review of the literature on the use of media in distance education, although a bibliography is provided. Instead, I will adopt a more idiosyncratic approach, drawing selectively on the experience from these reports, concentrating on the main parameters or factors that need to be considered by planners.

There are text books on media selection (see for instance Reiser and Gagne, 1983; Romiszowski, 1974), but they are totally useless for planners of distance and open learning systems, since these books are based on an algorithmic, reductionist approach, resulting in tiny decisions at a classroom level, assuming no constraints other than pedagogic requirements. Planners of distance learning systems though have to live in the real world, where finance, politics, and the power of existing organizations all influence decision making. So the first point to be made is perhaps a comforting if not very helpful one. There is no logical, step by step procedure for deciding on the "best" media configuration or collaborative arrangements. A large number of factors, none of which can be measured or weighted scientifically, have to be taken into consideration. In the end, all these factors have to be thrown in and an *intuitive* judgement made. (Fortunately, human beings are quite good at this, provided all the factors have been thoroughly considered first).

Secondly, since the one common feature of most distance learning systems is that they are all different, this means there is no single optimum choice, either for the selection of media or for collaborative arrangements for using media in distance education. Each teaching system has to be custom designed to suit the circumstances in which it has to operate. This does not mean though that there are no guidelines or experience to draw on. There are certain factors that have to be taken into consideration when deciding which media, and how much of each medium, to use. In other words, there is a checklist of points to consider.

ACCESS

Of all the factors to be considered in distance learning, access and delivery is perhaps the most important. No matter how instructionally effective a particular medium might be, it is useless if it cannot get to the target audience.

The appropriateness of a particular medium, in terms of access or delivery, will in turn depend on the philosophy and aims of the distance or open learning system. Is the system aimed at all adults, or are there priority target groups? Is it aimed primarily at home based students, or at students at work, or will students study primarily in centres? If the target group is all adults studying at home, the choice of medium will be dependent on what kind of equipment the vast majority of the target group will have at home. For many developing

countries, this will be the radio set. For countries like Canada, Australia and Britain, it will mean a wider range of media, like television, postal services for print, radio, telephone and audio cassettes.

If on the other hand the target group is to learn primarily at centres, equipment that can be shared can be provided: in developing countries, this could be terrestrially broadcast television, radio, and audio cassettes; in developed countries, computers and video discs. For countries spanning large or geographically difficult areas, and especially for cooperative projects spanning several countries, satellites now offer a realistic and low cost system of distribution, although again in countries where most of the target group have low incomes, community or centre based access is likely to be essential, rather than private reception. For instance, despite 100% of the population of India being within the footprint of the Indian satellite broadcast signal, only 5% can afford TV receivers, and much fewer direct satellite broadcast reception equipment (Agrawal, 1982).

Another point to be considered is the *quality* of access. While all students may have a radio at home, it will not be much use if the only times available for distance learning programmes are when the target group is asleep or at work. Similarly, there is no point in providing centres with expensive equipment like television sets, if they are unreliable or no-one knows how to maintain them properly. There is also a good deal of evidence (e.g. Scanlon, 1982) which indicates that study centre attendance leads to many practical problems for students in using media (e.g. queueing) and can prove extremely inhibiting or even impossible for many students.

Another major factor affecting access across national borders is the problem of copyright, especially in broadcasting. The cost of clearing rights for use in another country can be both time consuming and expensive, particularly if high quality broadcasts are to be used.

The wider the range of media to be employed, the more important become arrangements with *other* institutions, such as broadcasting or telephone organizations, for improving access to students.

PEDAGOGIC ISSUES

Unique characteristics of media

Before going any further, we should ask *why* we should use media other than print in open or distance learning. What can other media do that can't be done by print or face to face tutorials? This is a very difficult area to cover for a wide range of media in a short space, so I will concentrate on the unique educational characteristics of television, as an example.

We need to start by asking *why* is television (or any other medium) to be used, and for what *teaching purposes*? There are two important aspects of any medium. One is its appropriateness for *delivering* learning material to large numbers of students; the second is its *presentational* characteristics.

Distribution

It may be that the aim is to take advantage of the *distribution* characteristics of television, by recording and distributing illustrated classroom lectures. If the main purpose is to get a high quality lecture to a large number of students around a country or region, or the latest information on new developments out as quickly as possible, or to update those with already a good grounding and basic understanding of a subject, then the illustrated lecture may be an acceptable use of television, since preparation time is about the same as for a

face to face lecture, and, perhaps most important of all, it is a very cheap way of using television, since production costs are kept to a minimum. Stanford University, and more recently the National Technological University, in the United States, and the Chinese Central Television University, have all used television extensively for this purpose. If television though is seen primarily as a means of distributing lectures, questions need to be asked as to whether or not this might be done more cheaply and effectively by radio, or a combination of print and radio. The University of Wisconsin in the United States has for many years used dedicated *telephone* lines to local centres to do the same thing.

Presentational characteristics

Each medium has its own presentational characteristics. Television has two different kinds of presentational characteristics. The first is television's ability to bring to distance learning students material not otherwise available, such as experiments requiring expensive laboratory equipment, case study material of social and technological events, field visits, dynamic presentation of ideas through animation and graphics. Many more examples could be given (see Bates, 1984, pp.244-247, for a list of such functions found appropriate in the Open University context).

The second is television's ability to help the learning process in unique ways. Television can provide concrete examples or models of abstract principles, can model processes, and through the combination of picture (usually providing the example) and commentary, relate example to principle. In other words, for many students there are often times when words are not enough; they need to be able to see to understand, and television is one way - in a distance learning situation often the only way - in which this can be done. (Salomon, 1983, suggests a number of ways in which television is particulary powerful in assisting the learning process, such as illustration, modelling, and providing alternative ways of thinking about subject materials that students would have difficulty in generating for themselves).

However, to use television to exploit fully its presentational characteristics requires much larger budgets than for just relaying lectures, and relatedly, a much higher level of production professionalism. This is more likely to be achieved through collaboration with a broadcasting organization, provided the broadcasting organization does have that expertise in the educational area (which is not always so).

Production styles and the design of distance learning materials

Each medium can also vary in the way materials are produced. Television programmes made by broadcasting organizations generally tend to have a unity of their own, independently of even media to which they are directly related. Broadcasts tend to adopt a continuous flow, deliberately being constructed to hold the viewer's attention right through the programme, and often provide material not otherwise available to the viewer or teacher, thus exploiting the unique presentational characteristics of the medium.

Video, though, while concentrating on the unique presentational characteristics of television, can be structured quite differently from a broadcast programme, particularly if it is intended to exploit some of the *utilization* characteristics of cassettes. Thus television material can be made in short independent segments, with clear stopping points, explicit directions for activities of questions for discussion. This is even more true for audio cassettes, in comparison with radio.

Lastly, television or radio programmes may be either completely pre- recorded, or include a *live* element, including feedback or questioning from students, or exchange of materials from different sites. There is no technical reason why live interactive programming cannot be done using terrestrial broadcasting, but due primarily to scarcity of time on terrestrial

networks, such use has tended to be confined to cable or satellite broadcasting, as in the case of Knowledge Network in British Columbia, Canada.

Media differ considerably in the extent to which they encourage *active* learning. Generally, broadcast television is so designed that it is difficult for learners to interact overtly with the programme material, at least during transmission. Live interactive programming provides a form of surrogate interaction for viewers, but is still limited. Cassettes allow for much more interaction, often at a sophisticated level of response, such as discussion or open ended responses from learners. Computers are considered to be the most interactive medium after "real" teachers, but computers may restrict the level of response to fairly mundane activities, such as multiple choice or menu selection. The extent to which any particular medium encourages interaction or active learning depends to some extent on the way it is designed, but is also determined to some extent by the nature of the medium. What is clear is that the design of multi media distance learning materials which encourage active learning requires considerable *instructional* as well as *programming* expertise. An understanding both of media and learning is required.

Learning from media

In the end, though, do people learn just as well through modern media as through the more traditional face to face teaching or books? Do they learn just as well as from, say television as from lectures? Yes, students can learn just as well, if not better, from television, but *what* they learn, and how effectively, depends on the design of materials.

There is a good deal of research evidence which suggests that *content* may be learned just as well through any medium (see for instance Olson and Bruner, 1974; Clark, 1983). However, media differ in the *kinds* of learning they encourage. Thus in general, print is best for teaching in a condensed way, dealing with abstract principles, where knowledge of detailed facts or principles is important, and where knowledge is clearly defined. Television on the other hand is much better for presenting complex or ambiguous situations, for providing concrete examples to ilustrate abstract ideas or principles, and for encouraging students to make their own interpretations and to apply what they have learned in an abstract way to new situations (see for instance studies done by Salomon, 1979, 1983; Bates and Gallagher, 1987).

The extent to which television is successful in doing this depends on how programmes are made. Television is rarely best used as the prime medium for delivering large quantities of information; instead, it is much more valuable for providing deeper understanding and for developing skills of analysis and application of ideas presented through other media, particularly print (see Salomon, 1983). If the programme is designed to give concrete examples of abstract ideas, it is necessary to make the relationship explicit. Open ended documentary style programmes, bringing in case study material for analysis by the student, can help develop students' skills at applying and interpreting what they have learned (see Bates and Gallagher, 1987).

Because television is such a familiar medium, it tends to be taken for granted that students will know how to learn from it. This is not the case. There is evidence (Bates and Gallagher, 1987) that students need help and guidance to use television, particularly where comprehension is not the main purpose. Most students approach television as if it were a lecture, unless the programme is made in such a way as to encourage them to question and analyze what is being presented to them. This may mean building in stopping points for discussion, direct questions on the commentary, replaying sequences with different interpretations, etc. Television can be a very passive medium. For individual learners, this can be avoided by designing the programmes to encourage frequent interaction with the material through relevant activities. The most effective way to get the most out of televi-

sion material, though, when interpretation and application are the main aims, is through group discussion, guided by relevant questions for discussion (see Durbridge, 1982). This is one reason why live, interactive programming, even for rather straight television lectures, is so important.

Professionalism

If the aim is to exploit the unique *presentational* characteristics of television or any other medium, then three kinds of expertise are required. The first is knowledge of what that medium can do, related to the subject matter to be taught. This is important, because a skilled television producer or computer programmer may be able to suggest ways of using television or computers which would never occur to a teacher without any experience of using these media. The second is knowledge of the subject matter, and valid and effective ways to teach that subject matter. The third is expertise in instructional design, how to integrate, for instance, television material with the other teaching material, and how to help learners get the most from the various media. These three kinds of expertise rarely exist in one person; therefore a team approach is required, where those with different expertise work together to create the whole package. The most obvious case of this is the UK Open University, where subject experts, print editors, television producers, computer experts and instructional designers all work together. The team approach though takes time, and costs money.

Most media are not homogeneous, but can be used in many different ways, according to the learning context and the teaching aims. To get the best out of media requires a professional approach. It is essential that before deciding whether or not to invest in a particular medium, their pedagogic characteristics, and the need to provide professional support, are fully understood.

A question of quality

Despite the difficulties and the extra costs incurred, there is no doubt in my mind that media such as television and computers have an important and valuable role to play in distance learning. Many of the weaknesses of ephemeral broadcast television can be avoided by recording material in a permanent form, and even more so by designing material to encourage interaction and active learning from the students. Some of the high costs of computer assisted learning can be reduced by buying courseware from other organizations and by providing terminals or micro computers in local centres. Satellites make networking of centres across large distances economically viable for both television and computing, once the basic satellite infrastructure is in place.

Distance learning courses can be designed without a television or computing element. However, a well designed television component not only helps to reduce dropout and increase comprehension, it can also assist the development of higher order learning skills. Computing can provide practice, revision and reinforcement of both knowledge and skills. In other words, such media can increase the *quality* of distance learning. There is however a high price to be paid for this, as we shall see.

COSTS

Of all the factors, this is the most tricky, because of the problem of defining exactly what counts as a cost in distance education. (For a good review of this area, see Perraton, 1982, and Rumble, 1986). For instance, broadcast transmission costs might be offered free to a distance teaching organization (e.g. ACCESS Alberta, for Athabasca University), or it might be charged at marginal cost (e.g. BBC transmission of UK Open University pro-

grammes) or it might be charged at full commercial rates (e.g. Pakistan Radio for the Alama Iqbal Open University radio programmes). The nature of the financial arrangements between collaborating institutions becomes critical in determining the costs of distance education. Who pays for what?

Most of the literature on the costs of media (e.g. Laidlaw and Layard, 1974; Jamison, Klees and Wells, 1976; Unesco, 1977, 1980, 1981; Wagner, 1982) adopt what I call a capitalist, "rational" macroeconomic approach to costing media. However, while investment in education at a national level may be considered "rational" in free market terms (if one holds that ideology), such an approach does not usually make sense in terms of *managing* a distance education system, since budgets may come from a variety of different sources and their utilization may be non negotiable. For instance, if a government in a developing country controls the broadcasting system, and decides to make a certain amount of its facilities available to a distance teaching organization, it does not make sense for the distance education institution to ask for cash instead to increase print production. The cash is not there; instead an existing resource is to be used for a different purpose. What is more important is to be aware of different ***kinds*** of costs, and particularly the secondary costs that are likely to fall on a teaching institution as a result of using media, whether offered free or purchased at market prices, and those costs which are within the power of the distance education system to control.

Costs of media in distance education need to be broken down in several ways. First of all, it is important to distinguish between *fixed* and *variable* costs. The cost of running an in house video or print production unit is likely to be fixed. The staff, for instance, will have to be paid whether or not the unit produces a large or small amount of work. The BBC estimates that somewhere around 80% of the cost of providing broadcast services for the UK Open University are fixed. On the other hand, costs of *distribution* for print are likely to be variable, i.e. they will depend on the number of copies mailed. Broadcast television distribution costs though are fixed, in that the cost of a broadcast transmission is the same, whether it is watched by one or a million. Some activities can be both fixed and variable. Television production for instance can be divided into fixed costs (e.g. utilization of a studio, which has to be paid for irrespective of its level of use) and variable costs (the *extra* costs incurred each time a programme is made). Once a programme is made, though, its total production costs are fixed, irrespective of the numbers who use it. (This also applies to texts: design costs are fixed for a particular text, there will be variable costs for each new text produced, while printing and distribution are always a variable cost). This is why it is often much cheaper to buy in material than to produce it oneself, since it is only the variable costs which have to be paid for (strictly speaking, the cost of bought in material usually includes a cost factor to cover some of the overheads, but it is averaged out over all production, not just those bought by the institution).

Media differ in the relationship of fixed to variable costs. Face to face teaching has relatively low fixed costs and high variable costs; print has relatively high fixed costs, and relatively low distribution costs; broadcast television has very high fixed costs, and very low variable costs.

Does this division matter? Very much, because the economics of using media depend to a large extent on the division between fixed and variable costs, the range of material produced, and the numbers of students using a particular media component. The greater the number of students using a single component, or the more media components produced (e.g. the more television programmes produced), the more effective it is to have high fixed costs and low variable costs. Thus, if the distance education system has very large numbers of students (i.e. well over 1,000) following a specific course, it pays to use media with high fixed costs and low variable costs; for small scale distance education institutions not expecting to expand numbers greatly, media with lower fixed costs may be better, even

though the variable costs may be higher. It should be noted that some of the newer technologies, like video cassettes, radically change the fixed variable ratio for a medium such as television. The consequence of this is that if broadcasting is to be used, it can be justified on economic grounds only if there are very large numbers of students or viewers intended to watch each transmission. The establishment of a special department for making broadcasts for a distance education institution can be justified only if it is to produce large numbers of programmes per year (e.g. over 200). This is not to say that television is necessarily inappropriate on cost grounds for small institutions; however, other modes (in this case, low cost video cassette production and distribution) would be more appropriate. In some cases, where few programmes are made, but each programme will be used by large numbers, it will be better to buy in just the necessary production from outside, but still use transmission.

Before entering into any collaborative arrangement with a broadcasting institution or a publishing company, managers of a distance learning system should be very clear about the balance between fixed and variable costs, the likely amount of production to be required, and the likely numbers of students to use the various media.

Another distinction that has to be made is between costs at different stages of media use. The main cost areas are:

- production
- distribution
- costs for utilization (e.g. equipment)
- student costs

Production costs can vary enormously. Using television to relay lectures is very cheap, once a studio is installed and manned. Exploiting the unique presentational features of television will require more expensive productions. However, costs can be kept down by using low cost production and editing equipment. Full scale broadcast production on the other hand will be expensive. For the latter kind of programming, production costs are likely to exceed distribution costs by a factor of at least 50 to 1. Being offered free transmission time on a satellite is no big deal then if the cost of production has to be found.

In developing countries in particular, the cost of reception equipment would normally have to be included as an essential part of any project using television or computers, since students would not normally be able to find this cost for themselves.

The cost of reception equipment is significant:

> The constraining factor in large-scale growth of the UNSAT-1 utilization is essentially the investment involved in provision of community TV receivers, direct satellite reception of VHF type, and rebroadcast transmitters.
>
> Dept. of Space, Govt. of India, 1983

On the other hand, if the distance teaching system is responsible for supplying equipment for learners (e.g. television receivers, computers), then these hardware costs can well exceed both production and transmission costs, since to justify high fixed costs (and both broadcast television and computer based learning have high fixed costs) large numbers of students will need to use the material - requiring large quantities of hardware, if that is to be supplied.

For this reason, it is not a good idea to depend on media which require hardware provision for students (even at centres) unless the fixed and variable costs of the medium are low (audio cassettes and even more so radio are good examples of media with low fixed and variable costs).

Lastly, an important consideration is the extent to which students are expected to meet the cost of using media. Who pays: the institution or the student? What would the effect be on enrolments if students have to supply their own equipment? Will students be expected to travel to face to face tutorials - or pay their own telephone charges to call a tutor? These are matters of policy, not often implemented consistently in individual institutions, but they can affect considerably the costs of studying in distance or open learning.

It is too simple therefore to see certain media (such as television) as being expensive, and others (such as print or face to face tuition) as being cheap. It depends on the system configuration. With large numbers of students, and a suitable means by which students can access material, broadcast television may be justified economically, especially if the responsibility for production and or distribution costs lie with the broadcasting organization. In other contexts, video cassette distribution might be appropriate. In really poor countries, radio, perhaps backed up with audio cassette recorders at centres, might be the most feasible medium economically. If the fixed costs are included (e.g. the cost of academic time), print may not be all that cheap to produce, and quite expensive to print and distribute, depending on the numbers involved. Lastly, the economics will be muddled by the assumptions and policy decisions made by governments and other agencies as to which costs will fall on the distance education system, the student, or other organizations. Despite this, a careful cost analysis, based on disaggregating costs and separating fixed and variable costs, can be most helpful, and ought to be an essential step before entering into collaborative arrangements.

ORGANIZATIONAL ISSUES AND COLLABORATION

A key factor in deciding which media to use is whether available organizations can reliably produce and/or deliver high quality materials. For instance, it is no good relying on print if the postal service is unreliable, or does not reach key target groups. Broadcasting might be expensive, but if the organization has a reputation for reliability and quality, that is an important factor to take into consideration.

It is also better to work with organizations that are committed to the project, willing to work with media, and prepared to be flexible, than with institutions who do not believe either in the project or in the use of media. At this point, something needs to be said about dual mode institutions. These are institutions which combine conventional on campus with off campus teaching, using distance teaching methods. Deakin University in Australia is a good example of a dual mode institution, providing on campus teaching in Geelong, Victoria, but also distance learning courses for students across the whole of Australia. Dual mode institutions are common in Canada, Australia, New Zealand, Scandinavia and the USA.

One of the problems of dual mode institutions is that conventional academics usually get little or no reward for working on off campus activities. Furthermore, many conventional university staff have no idea how to use media sensibly for educational purposes, as they rarely use media in conventional teaching. In distance education, though, it is not a question of whether or not one *should* use media, but rather *which* media should be used. Locating distance education activities within a conventional university can lead to all kinds of

problems, unless it is independently financed and unless it provides career advantages and professional training in distance education to those who work in it.

For instance, distance education requires dramatically different ways of designing and delivering courses using media, from conventional university courses. Greater budgets need to be given to operational and production areas, media managers need to have a major role in decision making and structures (such as course teams) need to be designed to encourage integration of media. These requirements often cut across traditional academic power bases in conventional universities, especially academic departmental structures, and hence tend to be strongly resisted.

All these factors have major implications for the structure of collaborative projects, and particularly for deciding on which institutions should be involved. A number of management models have been tried to integrate media in distance learning projects:

In house production

A distance education institution produces (and perhaps distributes) its own media. This is common with both print and computer based learning, less so with television, although even this is not unknown (e.g. Fernuniversitat, Deakin University). In house production is particularly popular with dual mode institutions, where an A/V or computer department already exists to serve on campus students. It is worth noting that the UK Open University has in house academic computing services (separate from administrative computing services), and in house print design, but external printing (because of high volume). Broadcast television is nearly always produced and distributed by a broadcasting organization, and not in house. The advantages and disadvantages of in house production of media can be summarized as follows:

Advantages

1 Control over costs and production lies with distance teaching institution.

2 Low cost.

Disadvantages

1 Especially (but not exclusively) in dual mode institutions, media production (other than print) is often given lower priority than academic activities, hence tendency for underfunding.

2 With underfunding, often small quantities of production, quality poor and hence non print media tend to be peripheral.

3 Collaboration with external agencies more ad hoc, and hence tendency not to use existing external facilities to the full, resulting in duplication of efforts.

Partnership

A distance education institution goes into partnership with a broadcasting organization, at least as far as distance learning activities are concerned. This is the basis of the relationship between the UK Open University and the BBC. There is a contract between the two institutions. The BBC guarantees to produce a certain level of programmes for the UK Open University and guarantees to transmit these programmes on a national network. The UK Open University pays the full cost of this, and guarantees to supply an adequate quan-

tity of academic material for production. BBC producers are full members of the course teams, contributing towards the content of the course. The BBC retains final editorial control and responsibility.

Advantages

1 Access to national transmission, and hence visibility for the OU, as well as cheap distribution to all target group.

2 High reliability and a high quality product, from department specially set up and devoted to OU needs.

3 Imaginative use of television appropriate to academic needs, through course team mode.

Disadvantages

1 Very high cost (10 million pounds per year, 15% of budget).

2 Editorial control with BBC, programmes not always seen as relevant by students.

Cooperative models

The essence of this model is several independent institutions coming together for specific projects to combine complementary resources. There are few examples of this with regards to media in distance education, although there are examples in educational broadcasting. For instance, in Sweden, the national broadcasting organization, two correspondence schools, two adult education organizations, and a publisher got together to design and deliver a set of courses for teaching English ("Start"). The BBC, the National Extension College, and local colleges of further education have combined resources in the UK to produce a number of multi media adult education courses (e.g. in adult literacy and computer literacy). The tendency has been in this model for the broadcasting organizations to take the lead, with other organizations providing support for the broadcast element.

Advantages

1 Each organization does what it does best, without too much interference from the other organizations.

2 Learners get a "rich" package of learning.

3 Existing resources are maximized without duplication of existing facilities.

Disadvantages

1 Tends to be ad hoc and limited to a small number of courses in any one year, because of the effort required in getting everyone together, hence no coherent package of courses (like a degree programme) possible.

2 Depends perhaps too much on goodwill alone between different (sometimes competing) organizations.

3 Usually one dominant partner (the broadcasting organization) which everyone else has to follow.

Open access

The essence of this model is the provision (by government) of a communications infrastructure to which different distance learning institutions have open access (as of right). This model is being developed in British Columbia (Canada). The provincial government has established and finances an educational communications authority (Knowledge Network), which is essentially a television network based on cable and satellite television. This network is available to any provincial educational institution, including the various distance learning institutions (Open Learning Institute, the three (dual mode) universities running distance education programmes, and one or two local colleges (e.g. North Island) running distance education courses). It is the responsibility of the individual institutions to enrol and accredit students, to provide programming, and to run the rest of the distance learning system; Knowledge Network just provides the means of delivery. To ensure greater utilization and coordination between the various providers of distance education and Knowledge Network, the provincial government has created the Open Learning Authority of British Columbia, with one common board over all distance learning activities.

Advantages

1 Guaranteed access to province wide television distribution at no cost for distance teaching institutions, giving wide publicity to their activities.

2 Editorial control lies with the distance teaching institutions.

3 Relatively low cost to run (2 million pounds a year).

Disadvantages

1 No money for production; hence low quality in house television production or over reliance on bought in productions.

2 Lack of coherence and still impossible to take degree solely by distance education methods.

3 Several small institutions duplicating functions (e.g. printing).

4 Lack of expertise within distance education institutions on how best to use television for distance education.

It can be seen that each model has its strengths and weaknesses, but that the actual pattern of cooperation usually depends on an existing set of institutions getting together (sometimes to prevent new institutions being created which may threaten existing institutions' activities) or on conventional universities developing new or reinforcing existing distance teaching activities.

The creation of completely new institutions like the UK Open University, of sufficient power and autonomy to by pass existing institutions, is rare in developed countries, but not in developing countries. Perhaps the most successful new open university in recent years is Sukhothai Thammithirat Open University in Thailand (STOU), with nearly 200,000 students and a reputation for efficiency and good quality materials. STOU uses radio extensively, and increasingly television, collaborating with independent broadcasting organizations.

There is a great deal to be said for creating specifically designed large distance education institutions in countries where there is a severe shortage of higher education places or con-

siderable dissatisfaction with existing provision. However, this is at least initially a high cost option, although STOU now has so many students that it recovers 80% of its costs in fees, and hopes to be financially self supporting in a few years.

CONCLUSIONS

It can be seen that not only is the nature of the organizational structure very important, but that each model has its own strengths and weaknesses. Nevertheless, a number of general points can be made.

With media production, you get what you pay for. Too often too much emphasis is given to distribution, and not to production. Producing large quantities of high quality media is expensive. It needs money, on a recurrent basis. On the other hand, distribution systems in comparison are relatively cheap. Many of the models (e.g. the open learning system in British Columbia) avoid putting money into media production, hoping that somehow, high quality materials will get produced once the distribution system is in place. They will not. Using existing broadcasting resources is one way of avoiding new production costs. This though is dependent on the broadcasting organization having the right sort of expertise within the educational sector, is willing to redirect resources away from other areas to the production of distance materials, and requires a structure which enables broadcasters and academics to communicate with and understand one another.

Quality production requires quality staff, i.e. staff who understand the characteristics, strengths and weaknesses of the media in which they work. There is no substitute for professionalism. One reason why media other than print have been so little used in distance education is because academics are unaware of how to use visual media properly, production centres have generally been under funded to provide quality productions in sufficient quantity to make an impact, and because professionals in media such as broadcasting or computing do not always understand the requirements of distance teaching. It is better not to use television or computing at all, than to use them badly (see for instance O'Shea and Self, 1983).

Getting different institutions to collaborate in the field of media is difficult. Professionals in different areas have different values and priorities. Broadcasting in particular is seen as a mass medium, requiring large audiences to justify the high costs, and broadcasters tend to defend their editorial control to the point of arrogance. In general, broadcasters have also been reluctant to move into non broadcast production, and adapt production styles accordingly, despite its advantages for distance education. Non broadcast video is only relatively cheaper than broadcasting; quality production is still expensive, and still requires people who understand the medium. The same applies to computer based learning. Whatever organizational structure is set up, therefore, it has to provide sufficient funding for the media activities, and structural mechanisms which enable media professionals to communicate with and influence academic colleagues (and vice versa) in the process of course design and production using media. These structural mechanisms (such as course teams) do not happen by accident, but have to be planned and designed specifically.

Buying in materials from other institutions can be useful, but needs to be done with great care. Students find it difficult enough to learn from indigenous productions; language and cultural problems associated with imported programmes increase student learning difficulties (see Agrawal, 1986, and Calvert, 1986, for instance).

In terms of costs, radio is likely to be the cheapest for large numbers, and audio cassettes for low numbers, on a specific course (see Bates, 1982). However, audio cassettes are

likely to be much more effective than radio (see Bates et al., 1981). Print is more expensive, and more effective, for straight comprehension, especially if combined with audio; non broadcast television is suitable at relatively high cost for courses with relatively low numbers of students, where students have problems in comprehension from the text, or where higher level cognitive skills are required. Broadcast television can do the same as non broadcast television for high numbers of students, but at much greater cost, and less effectively than video cassettes. Computer based learning is likely to be extremely expensive both to produce and deliver, for either small or large numbers, having high fixed and high variable costs.

Lastly, it is clear that if a wide range of modern media are to be used, not only will adequate funds have to be found, but scarce expertise as well. This will not be achieved by different institutions without that expertise combining efforts; either a collaborative partner will have to be found with that expertise, or the expertise will have to be trained or bought in (and that will be expensive).

Basically, two strategic policy decisions need to be made regarding the use of media in a collaborative open learning project or system. The first is: should media other than print play a major role in the teaching system? In other words, will television, radio, and/or computers play a significant teaching role? This I would call a *high-profile* media project. The second decision is: should media other than print be designed and produced by educational or non educational units? In other words, should television production be done within one of the existing educational institutions to be included in the collaborative project, or should a separate or new production unit be created, or should a broadcasting institution be responsible for production and distribution (and if so, will it be a collaborative partner, or be used as a commercially contracted institution?)

The answer to both strategic policy questions will depend on "local" conditions: the money available to the project (the less money, the less likely the use of non print media), the existing facilities for production and distribution (especially trained manpower), the flexibility of educational and broadcasting institutions, and the role of central or local governments. A low profile use of media would lead to relatively low costs, but probably also poor quality teaching. A model that took responsibility for production of media materials as well as distribution would also have higher costs, but probably more relevant and better quality material, than a system where materials are bought in from other agencies. Unfortunately, in both cases, it is almost certain that relatively high levels of expenditure will be needed to ensure quality open learning materials. You pays your money and you takes your choice.

Selected bibliography

Agrawal, B. (1982)
"Communication structures in India: a case study of television"
Communicator, October.

Agrawal, B. et al. (1986)
INSAT Pre-production Television Research for Higher Education: A Consolidated Report for UGC Ahmedabad: ISRO.

Bates, A.W. (1980)
The Planning and Management of Audio-Visual Media in Distance Learning Institutions
Paris: IIEP

Bates, A.W. et al. (1981)
Radio: The Forgotten Medium?
Milton Keynes: Open University

Bates A.W. (1982)
"Options for delivery media" in PERRATON. H. (ed.)
Alternative Routes to Formal Education, Baltimore: John Hopkins

Bates, A.W. (1984)
Broadcasting in Education: An Evaluation
London: Constable

Bates, A.W. (ed.) (1984)
The Role of Technology in Distance Education
London: Croom Helm

Bates, A.W. and Gallagher, M. (1987)
"Improving the educational effectiveness of television case-studies and documentaries" in
Boyd-Barrett, O. and Braham, P. (eds.)
Media Knowledge and Power
London: Croom Helm

Calvert, J. (1986)
"Facilitating transfer of distance courses"
Open Learning vol.1, no.1

Clark, R. (1983)
"Reconsidering research on learning from media"
Review of Educational Research vol.53, No.4

Durbridge, N. (1982)
Developing the use of video cassettes in the Open University, Milton Keynes: Open University (mimeo)

Government of India, Dept. of Space (1983)
INSAT-1B. Delhi: Govt. of India

Hawkridge, D. and Robinson, J. (eds.) (1982)
Organising Educational Broadcasting
London/Paris: Croom Helm/Unesco

Jamison, D., Klees, S. and Wells, S. (1978)
The Costs of Educational Media
London: Sage

Kaye, A., and Rumble, G. (1981)
Distance Teaching for Higher and Adult Education
London: Croom Helm

Laidlaw, B. and Layard, R. (1974)
"Traditional versus Open University teaching methods: a cost comparison",
Higher Education vol.3, no.4

Lyle, J. (1982)
"Since 1967: The Original Case-Studies Revisited" in Hawkridge, D. and Robinson, J. (eds.)
Organising Educational Broadcasting
London/Paris: Croom Helm/UNESCO

Olson, D. and Bruner, J. (1974)
"Learning through experience and learning through media" in Olson, D. (ed). Media and Symbols: the Forms of Expression Chicago: University of Chicago Press

O'Shea, T. and Self, J. (1983)
Learning and Teaching with computers: artificial intelligence in education
Brighton, Harvester

Perraton, H. (1982)
The Cost of Distance Education
Cambridge: International Extension College

Reiser, R.A. and Gagne, R.M. (1983)
Selecting Media for Instruction
Englewood Cliffs: Educational Technology Publications

Romiszowski, A.J. (1974)
Selection and Use of Instructional Media
London: Kogan Page

Rumble, G. (1986)
Costing Distance Education
London: Commonwealth Secretariat

Salomon, G. (1979)
Interaction of Media, Cognition and Learning London: Jossey-Bass

Salomon, G. (1983)
Using television as a unique teaching resource for OU courses Milton Keynes: Open University (mimeo)

Samson, G. (1983)
A-V Media in de Open Universiteit Utrecht: Stichtung Film und Wetenschap

Scanlon, E. (1982)
"Computer-assisted learning" Teaching at a Distance, Institutional Research Review, no.1
Milton Keynes: Open University

Schramm, W. et al. (1967)
The New Media: Memo to Educational Planners.
Paris: Unesco: 11EP

Sewart, D. et al. (1983)
Distance Education: International Perspectives
London: Croom Helm

Unesco (1977, 1981, 1982)
The Economics of New Educational Media, vols. 1-3
Paris: UNESCO

Wagner, L. (1982)
The Economics of Educational Media
London: Macmillan

Section III

Distance Education in the World: A Range of views from Participants

REFLECTION ON THE DEVELOPMENT OF DISTANCE EDUCATION THE ALGERIAN EXAMPLE

Mohand Benmouhoub
Centre National D'Enseignment Generalise Par Correspondance
Radio Diffusion, Television
Algeria

Algeria:
Reflection on the Development of Distance Education: the Algerian Example

Mohand Benmouhoub
Centre National D'Enseignment Généralisé Par Correspondance
Radio Diffusion, Télévision
Algeria

Foreword

Distance education has acquired an undeniable fame in the last decade. Its unique characteristics make it a means of education perfectly compatible to very diverse situations, in particular by:

- its efficiency, resulting from the combined use of multi media teaching techniques (written texts, audio visual material, meetings, practical workshops...);
- its flexibility of organization and adaptation, and its relatively easy multiplication (replicability).

Whereas this mode of education is used increasingly by economically developed countries, in the Third World, particularly in Africa, except in a few rare countries, distance education has been practically stagnating at an embryonic stage. If the considerable potential demand, the relatively low costs and the great educational needs are taken into account, it is unnecessary to emphasize the benefits that judicious use of distance education, by countries whose economic weakness does not permit a generalization of education, to help them fulfil the rightful expectations of their people and the technological necessities of the time.

1 Starting point

We wish to avoid burdening this paper, so we shall not follow the trend of drawing an exhaustive picture of the topic's present state. Many studies have been devoted to it, with more or less success. For distance education experts, the gains, as encouraging as they may be, cannot hide all the obstacles still to be confronted as this mode of teaching progresses.

It is in this sense that we opt for the view point that takes into account a "starting point" determining the nature of the information to be retained and, through it, the choice of solutions and recommendations to be proposed.

In the present state of things, and in an empirical manner, it is possible to distinguish two main "starting points" throughout the world:

- countries which have developed a more or less well developed distance education network, with more or less successful variations.

- countries where a distance education system, if it exists at all, remains at an experimental stage, with resources often quite limited.

For the first mentioned, the problem is to overcome the pessimism, the resistance even, of a large potential audience by refining a varied range of multi media teaching means which could improve the distance education provided.

As for the second group of countries, due to lack of appropriate means, and especially of experience and knowledge, they try laboriously to develop distance education in its primary form, often making the same mistakes as those who preceded them.

Hence, we see that a reflection which did not take this into account would consider only partially the objectives of an institution which strives to reflect the expectations of the international community. But beyond such distinctions, which no doubt call for solutions of an essentially organizational nature, can we not identify a set of common concerns, specific to distance education?

2 Determining factors in distance education

It would be ambitious to claim that we can approach such a vast subject in an exhaustive manner in these few pages. So we shall be content to gather the essential factors, through some very wide concepts, which, in our opinion, are conditions for the success of distance education. For convenience and, above all, because of the constraints of this paper, we propose to group the factors into three categories:

- elements linked to the pedagogical aspects of the distance education system;

- determining factors of a psychological nature;

- considerations pertaining to the legislative and regulatory area;

We shall try to clarify what these three aspects involve, in a necessarily brief manner.

2.1 Pedagogical requirements

On account of the narrow links uniting them, the different aspects of pedagogy must be approached in their interaction.

2.1.1 Time space organization

This is a determining factor in so far as the more a distance education system is adapted to different individual situations, the more interest the chances of success it presents. In other words, it is essential that the teaching organization be flexible enough to offer possibilities for self education at a rhythm adapted to the abilities and socio professional conditions of each student, thus allowing for individual programming.

Moreover, a geographical rapprochement facilitating more frequent contacts would also be an important advantage.

2.1.2 Didactic methods

It would be a mistake to conclude hastily that the efficiency of a didactic method depends on its degree of sophistication. Without dwelling on the judicious choice of a technique, it is necessary to emphasize two basic requirements, common to all teaching material used in distance education.

The first results from the fact that a distance education course must not be limited to the sole presentation of knowledge, however exhaustive, as it would then be just like a textbook. It must also involve the student in his own learning, guiding him with appropriate advice, with on going dialogues, organizing continuous feedback, multiplying experiences and opportunities for control and self assessment, raising interest and the thirst for knowledge, caring for a clear and judicious presentation of information.

The second is linked to the degree of closeness between the teaching material and the reality under study. For example, an audiotape would be more appropriate to present pronunciation, an aspect essential to the study of languages, just as a visual (filmed) documents would be more suited to the study of scientific and technological phenomena.

2.1.3 Multi media complementarity

It is unnecesary here to return to old quarrels about the supremacy of one technique over another in distance education. The advantages and limitations of each have been amply demonstrated by experience.

This is why we prefer the concept of complementarity through the combined use of the different media.

These teaching media range from audio visual material in all its forms to the use of the telephone, computers, individual or collective meetings, practical workshops of limited duration, intensive holiday courses etc... For distance education specialists the problem is, from now on, the most appropriate choice and combination of the different media available, taking into account both their teaching effectiveness and concerns of a strictly material nature.

Nevertheless, no matter how efficient the conception of a distance education course is, it will not be sufficient to ensure the expected results. Indeed, it is undeniable that extra pedagogic factors are determinants in this type of education.

2.2 Psychological factors

Whatever the value of a didactic document (correspondence study guide), it can never offer the reassurance, support and encouragement that only a teacher can provide with his presence.

2.2.1 Periodical contacts

Periodical contacts are now an absolute necessity to help the student overcome not only any difficulties he might meet in his studies, but also, and especially, all the fears and doubts, of whatever nature, which are the main causes of failure leading to withdrawal. The student who works alone has a pressing need of support and

encouragement, especially during the first stages of his studies. Hence, it is imperative to promote occasions of contact between student and teacher, whatever the form these contacts take.

2.2.2 Feelings of isolation

The student's isolation is another important factor of discouragement. It is necessary to remedy his isolation, to multiply his opportunities to meet other students, thus allowing him to share his fears and difficulties, to assess his knowledge and to appraise the progress of his work in a peer group.

2.3 Regulatory and legislative factors

We must take into account the important fact that the majority of students participating in distance education is made up of adults (mature age students). Their characteristics must underline all reflection on the subject.

Rare cases excepted, the adult who chooses distance education is usually motivated by concerns that are essentially socio economic (vocational). Hence, the efforts the student is ready to make are closely linked to the expected advantages and to the delays necessary for obtaining them.

The adult wishes to benefit very quickly from the fruits of his efforts, and a course which does not legally grant him a more advantageous status is of little interest to him.

It is thus necessary to insist upon actions to be undertaken within the appropriate international bodies and towards the authorities involved in order to remove the many psychological and regulatory obstacles to the recognition of the education provided at a distance, otherwise this education will remain marginal for a long time still.

3 The Algerian experience

Since the recovery of its independence, Algeria, anxious to remedy a considerable lag in the area of education (80% illiteracy in 1962) has not neglected any available means. Thus, and amongst other things, distance education was developed very early, first for the training of teachers, and later for the benefit of all the citizens who wished to improve their level and promote themselves.

Year after year the Algerian system, wrought from a particular social situation, has not ceased to record gains, based both on its own experience and on internationally recognized theories.

Briefly, distance education in Algeria is characterized by the following:

- Approximately 100,000 students benefit each year from distance education courses aimed at all levels.
- The education provided is based on the written text and improved with radio and television broadcasts through the national mass media.
- Student meetings are organized weekly in public educational institutions, where practical work sessions also take place.

- An important number of regional centres are open throughout the national territory in order to get as close as possible to the students.

- Each cycle of the course is ratified by an examination, giving right to, in case of success, the granting of a document accrediting the level attained,and the value of which is officially recognized.

- A specific pedagogic training is developed for the benefit of teachers who specialize in distance education and for whom a particular status is under study.

- Applied research aiming to work out a methodology and the particular techniques for the design of teaching media suited to distance education is being developed within the specialized structures.

- As the principle of free education is honoured in Algeria, the organization costs of education are taken in charge by the State budget. Nevertheless, the student contributes a moderate proportion. His contribution is sometimes paid by his employer, within the framework of the work laws which consider education both a right and a duty.

- As an indication only, the student/cost in the distance education organized in Algeria is in the region of US$100 to US$150, the maximum being for technical courses. It goes without saying that this education is provided with non profit making goals.

- The rational use of public educational institutions during the holidays, as well as the contribution, during some of the time, of the teachers, with a ratio of one teacher per thirty students, have greatly contributed to the reduction of costs.

- Finally, it is possible to estimate at approximately US$1 million the minimum costs necessary for the organization and functionning of a distance eduction structure for approximately 30,000 correspondence students. Obviously these costs depend on the total economic situation of the organizing country.

- This glimpse at the Algerian distance education system gives only the essential steps as the scope of this paper does not allow for more details. These, however, can be communicated later, on written request, to any institution interested in this experience.

4 Recommendations

We will restrict ourselves to giving, without comment, a set of recommendations which we believe to be important and the possible subjects for more in depth study within groups set up for this purpose by the international institutions involved.

4.1 At university level

Systematization of the preparations for the examinations for entry at university through distance education.

- To fight the prejudices, distrust and other administrative and psychological blocks against distance eduction, through the adaptation of the regulations which govern all higher education organization.

- To take charge of postgraduate education, with alternating periods of distance education and residential courses, thus reducing costs considerably (accommodation, education costs...) and widening the scope of operations. Hence the possibility of regrouping similar specialities and relieving institutions and university centres, as well as the opportunity given to all to combine cycles of study and of professional activity. This will be especially so in years to come when the rapid evolution of technology will require constant perfecting and retraining.

- Possibility of sub regional cooperation for the launching of university courses called "pointues", or of a higher level, with the possibility of sharing the task according to the tendencies and the means.

- Adaptation, translation of courses and other teaching material, exchange of teachers and lecturers, common programmes, satellite broadcasts etc...

4.2 At the general level

- To break away from the tendencies to show only the technological and financial aspects in discussions about distance education and to develop reflections on ways to improve the profitability if this type of education through the research and the up dating of multimedia teaching techniques and procedures.

- Launching of research programmes about distance education.

- Technical assistance for the setting up of groups for the planning and designing of systems and programmes of distance education courses.

- To take charge of the training of distance education specialists and of the designation of specialized regional centres and workshops.

- To encourage sub regional cooperation in distance education within the framework of existing official structures.

- To set up a data bank on the international experience in distance education and to make available the appropriate documentation to the structures involved.

- To organize international meetings on the theme of distance education and exchange of speakers.

- To take a census of, and make available, the experts and advisors in the different specializations of distance education.

5 Conclusion

The education and training of the young as well as the adults is the main concern of the states, whether they be rich or less rich, and however vast and complex their education system.

All education is inevitably out of date within a very short time owing to the rapidity of the evolution of knowledge and technology. The need for constant adaptation, even of professional reconversion, has now become an unavoidable reality. The funds devoted to education are very quickly proven to be insignificant, due to demographic pressures.

It is within this context that distance education, with its main unique characteristics (great extension potential, reduced costs, multiple adaptations), could be an important resource in the answer to the social problems of our time. For this to be realized, however, the attention it requires will have to be given to it by the bodies involved.

Algeria
The National Centre of General Education by Correspondence Course, Radio and Television (CNEG)

Achour Seghouani
Centre National D'Enseignment Généralisé Par Correspondance Radio Diffusion, Television
Algeria

Introduction

The National Centre of General Education by Correspondence course, radio and television (abbreviated to CNEG) was created by ordinance number 69.370, 22, May 1969. It is a public and administrative establishment endowed with civic duties and financial autonomy. It is attached to the Ministry of Education with its board of directors composed of representatives from several ministries.

Mission of the CNEG

The spread of general training has been the major reason for the foundation of the CNEG. Its foundation is the answer to several national preoccupations and has the perspective of national development. It was founded just before the first quadrennial plan.

From a political view, it is an important step towards the democratization of education and culture.

From the economic viewpoint, the CNEG is a basic contribution to the education of the nation, and through its influence it keeps the potentialities of the nation at a high level.

By its adaptability to the economic drives, and to the material and public utilities, it is better than the classical structures of education and courses as it acknowledges the objectives for national development and to the promotion of mankind.

On pedagogical matters the institution is a "receptacle" for educational enterprises. Its mission for training has made it an instrument of civic utilities concerning educational problems. It is through this perspective that the CNEG has been established according to the ordinance:

1.1 To administer lessons by correspondence courses with audiovisual aids to people who cannot follow lessons in an academic establishment or university. These lessons are also administered to pupils who are enrolled in other establishments, who, wish to improve their choice of subjects.

1.2 To administer lessons in arabic so that arabinization is progressed rapidly.

1.3 To administer all specific complementary education as a part of social promotion.

Implementation

Programmes

Currently, the influence of the CNEG has been extended in several fields.

General education (secondary and fundamental education)

The CNEG administers a general education by correspondence courses in accordance with the official programmes of the academic establishment under the Ministry of Education. It includes the third grade of fundamental education (lessons start from grades seven to nine of fundamental education), and the secondary stage, (first, second, third of secondary year) according to the "normal" and "transitional" options.

In this way, pupils not only take part in the examination, classically named Certificate of Education at average level, in French, BEM, and BEF (certificate of fundamental education) and General Certificate of Education), but also in all competitions which give access to schools, institutions and other centres of training and education. In addition to the internal promotion, candidacy has an important function.

The CNEG gives "opportunities" to those who succeed in their studies by correspondence courses.

In this "sense" this institution contributes to youth development.

In addition to correspondence courses, the centre administers an audiovisual course broadcast with the RTA participation (course recorded on the radio). TV productions are in progress.

The CNEG organizes "animation activities" (workshop sessions) during the academic year. These sessions enable pupils to have contact with their teachers and other students. They also do practical work. In workshop sessions teachers take the opportunity to encourage their pupils to improve and to correct their work.

Technical teaching

For four years the CNEG has prepared students for accountancy examinations (certificate of qualified vocation), in French CAP/assistant acountant, certificate of Technical Mastership, (in French CMTC), and certificate of Economics and Law, (in French CED).

Likewise, students have been prepared for the certificte of qualified vocation, (in French CAP), CAP/Insurance exists, but it is only administered at the request of the Insurance Company to the profit of its employees.

The preparation for the CAP/bank is in progress. The programme will be made available at the banking organization on request.

Vocational teaching (of internal promotion)

The CNEG prepares students for vocational examination, of administrative and of social scale (agent, secretary, administrative attache, sub- Intendant), for the benefit of the Ministry of Education.

The preparations for the certificate of superior capacity, (in French BSC), will enable teachers to have access to the degree at the fundamental level.

Specific courses

At present, the existence of specific courses are at the experimental stage and are all localized in the annex of chief, it is concerned with:

- The teaching of first aid;
- The preparation for examinations to enter paramedical schools (to the benefit of superior Technician Agent, (in French ATS), Fed superior Technician, (in French TS) and specialized superior Technician (in French TSS).

Methodology

The teaching is by correspondence courses (lessons, curriculum, documents and methodology guides ...), followed by workshop sessions and audiovisual broadcasts with the collaboration of RTA.

Lessons are prepared by qualified teachers in each subject.

The lessons are sent to pupils as well as the controlled tests.

Each consignment of lessons includes the work of three terms or semesters, to prepare for certain degrees.

Each subject involves:

- General advice, (programmes, schedule, work method, directives ...). Lessons include some explications, advice and rough drawings and schemes.
- Self corrected exercises enable the pupils to test their acquired knowledge. They have several controlled tests. The tests are allocated for three, four and two terms. Pupils have to send their tests to the centre to be corrected.

Once the tests are corrected, they are returned to the pupils.

The continuous assignments and the control on educational attainment are through encouragement, (pupils are encouraged to resubmit their work) and through the control of their attendance in workshop sessions during the academic year.

Pupils are in regular contact with teachers in different ways:

- Writing, telephone, or by visiting the centre.

- During the workshop sessions.

By the end of the year, pupils are awarded a General Certificate of Education which is equivalent to the existing level in other establishments. A final test is arranged for those who have fulfilled certain conditions:

- Justification of a testimonial of level (Certificate of Education).
- Steadiness and regular returning of the controlled tests to the CNEG.
- Regular attendance at workshop sessions.
- The final test is taken in May for the Algerian correspondence pupils.
- Their marks during the academic year.

Finally, the examinations in the CNEG are held in September and October. The teaching is free of charge. Pupils pay for their examinations according to course requirements.

Achievements

Thanks to its wide scope of intervention, the National Distance Education Centre CNEG contributes effectively to the national policy of quality in human resource development.

Moreover, because of its integrated action, it is the main channel through which pupils ejected by the formal education system are reabsorbed and given opportunities to catch up with instruction. That is why the CNEG is very often referred to as "the second chance school" for all those excluded by formal education.

The constant increase in the number of correspondence pupils and students is an obvious indication of its take off and ever growing development.

Following the human, material and financial means allocated to it, its size has jumped from 2,554 pupils in 1970/1971 to 86,615 in 1985/1986. Fifteen years after its creation, the CNEG has registered nearly 600,000 pupils and students come from various social and economic sectors of activity (not to mention an ever greater number of people who have benefited from its radio and TV programmes).

CNEG's accumulated experience of more than 15 years stemming from its involvement in instructional issues achieved in the past or to be pursued in the future, should give birth to the "first complex" of lifelong education. CNEG's mission is to turn into a sort of continuous education "melting pot". This should enlarge the size of its target population and encompass a scope of courses and specialities wider and more diversified than that existing in formal educational institutions. In this way, CNEG's ambition as an institution of lifelong education can be fulfilled.

Regarding its necessary expansion for the sake of decentralization and efficiency, other regional centres (there are 14 at present) should be created to meet specific regional or local educational and training needs. Our objective is to set up a a regional centre for each Department in order to ensure a correct nationwide coverage.

Regarding specific actions, some social, cultural and economic sectors could be looked at by the authorities as being top priority areas for CNEG intervention. Thus, CNEG could be

given the opportunity for a greater participation in solving some problems of national importance. For example, the generalization of the use of the national language, the social and vocational promotion of workers, youth's tuition, help for access to university studies, life-long education in general.

Development prospects

In order to widen its field of intervention in the different sectors of education (particularly technical education, which has been neglected up to now), CNEG contemplates launching various projects if adequate human, material and financial resources are made available for the institution to do so.

Short term projects

Course preparing for the technical capacity certificate, option management.

- Course preparing TCC holders for the Baccalaureat, Economics option.
- Course in first aid practice (at the national level).
- Courses leading to paramedical school entry.
- Courses in administration and school financial management (in arabic).
- TV programmes for 9 AF classes.

Mid term projects

- Course preparing for the basic school teachers aptitude certificate, part 1 (CAPEF).
- Course preparing for the secondary school teacher aptitude certificate (CAPES).
- Refresher courses for technical school teachers.
- Course preparing for the different types of the technical capacity certificate in industrial specialities with the support of technical schools and national companies.
- Educative TV programmes.
- Purchase of audiovisual hardware for on campus production (sound and video studios).

Long term projects

- TV programmes for 7 AF, 8 AF, 1 AS and 2 AS classes.
- Duplication of radio and TV programmes and distribution in schools and training and refresher courses.

Such varied and ambitious projects could be hindered by difficulties as regards:

- The bulk of financial resources necessary to reach these goals.
- The need for more equipment and qualified staff.
- Effective collaboration and participation of ministries involved in taking charge of the youth problems.

Depending on the resources allocated to it, CNEG will be in a position to determine workable objectives and to plan and sort out its hierarchy of priorities.

CNEG could play a highly positive role in:

- youth tuition;
- the provision of qualified manpower needed by our blooming economy;
- work in continuous education;
- social and vocational promotion of citizens imbued with the revolution's major ideals.

The necessary resources are required to mobilize and to dynamize CNEG's mission and to let it put into practice all these existing and noble projects.

Conclusion

In conclusion, we can say that CNEG, because of its nationwide presence, is a great and revolutionary attainment of Algeria's daring policy in the field of education and training.

It tangibly obeys the principle that the masses of people should be given the maximum opportunity for socio educative promotion. Its action falls within the context of the struggle of human potential. Hundreds of executives, ranking high in the hierarchy, should feel grateful to this institution for its services over the past 15 years or so.

1 Number of pupils registered during the school years 1984-85

Remedial Schooling	Basic Education	20,155
	Secondary Education	23,213
	Technical Education	3,546
	Total	46,914
Higher capacity certificate levels 1, 2, 3		27,481
Administration and school financial management		443
Specialized courses		1,876
	Total	76,714

2 Number of pupils registered during the school year 1985-86

Remedial Schooling	Basic Education	22,410
	Secondary Education	25,755
	Technical Education	7,126
	Total	55,291
Higher capacity certificate levels 1, 2, 3		28,873
Administration and school financial management		476
Specialized courses		1,975
	Total	86,615

3 Number of pupils registered since the creation of CNEG (from 1970-71 to 1985-86)

School Year	Courses		
	Remedial Schooling	Other Courses	Total
1970 - 1984 - 85	378,844	115,170	494,014
1985 - 86	55,291	31,324	86,615
Total	434,135	146,494	580,629

REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE
MINISTERE DE L'EDUCATION NATIONALE
CENTRE NATIONAL D'ENSEIGNEMENT GENERALISE

TABLEAU STATISTIQUE : INSCRIPTION

ANNEE SCOLAIRE: 1986/87

	CLASSES		Normal	Transitoire	Ensemble
ENSEIGNEMENT FONDAMENTAL	7ème Année F.		4597	–	4597
	8ème Année F.		2880	–	2880
	3ème Année Moyenne		2645	–	2645
	4ème Année Moyenne		13453	–	13453
	9ème Année F.		2510	–	2510
	TOTAL Enseignement fondamental		26085		
ENSEIGNEMENT SECONDAIRE	1ère A.S	LETTRES	5490	–	5490
		Sciences	5405	–	5405
		Maths	738	–	738
	2ème A.S	LETTRES	2413	–	2413
		SCIENCES	1271	1436	2707
		MATHS	258	235	493
	3ème A.S	LETTRES	5802	–	5802
		SCIENCES	3416	3286	6702
		MATHS	520	397	917
	3ème A.S TECHNIQUE	Economie	286	125	411
		Comptabilité	213	132	345
	3ème A.S Sciences Islamique		172	–	172
	TOTAL Enseignement Secondaire		25984	5611	31595
TOTAL FONDAMENTAL + SECONDAIRE			52069	5611	57680

.../...

.../...

	CLASSES	Normal	Transitoire	Ensemble
Enseignement Technique	CAP Aide Comptable 1ère Année	317	759	1076
	CAP Aide Comptable 2ème Année	45	187	232
	CMTC 1ère Année	309	1240	1549
	CMTC 2ème Année	48	625	673
	CED	30	385	415
	TOTAL	699	3596	4295
Administration - Gestion	Agent d'Administration	67	18	85
	Secrétaire d'Administration	77	35	112
	Attaché d'Administration	56	18	74
	Agent des Services Economique	17	41	58
	Sous Intendant	32	37	69
	Intendant	12	23	35
	TOTAL	261	172	433
Formation Enseignants	Niveau 1	2358	301	2659
	Niveau 2	3124	348	3472
	Niveau 3	7597	1061	8658
	TOTAL	13079	1710	14789

Recapitulatif Inscription	
Enseignement Fondamental	26 085
Enseignement Secondaire	31 595
Enseignement Technique	4 295
Administration-Gestion	433
Formation Enseignants	14 789
TOTAL	77 197

REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE
MINISTERE DE L'EDUCATION NATIONALE
CENTRE NATIONAL D'ENSEIGNEMENT GENERALISE.

TABLEAU STATISTIQUE : INSCRIPTION

ANNEE SCOLAIRE: 1987/88

	CLASSES		Normal	Transitoire	Ensemble
ENSEIGNEMENT FONDAMENTAL	7ème Année F.		5380	–	5380
	8ème Année F.		5280	–	5280
	3ème Année Moyenne		–	–	–
	4ème Année Moyenne		17790	–	17790
	9ème Année F.		5550	–	5550
	TOTAL Enseignement fondamental		34000		
ENSEIGNEMENT SECONDAIRE	1ère A.S	LETTRES	3670	–	3670
		SCIENCES	7990	–	7990
		MATHS	1050	–	1050
	2ème A.S	LETTRES	3800	–	3800
		SCIENCES	3760	–	3760
		MATHS	845	–	845
	3ème A.S	LETTRES	8100	–	8100
		SCIENCES	4990	4650	9640
		MATHS	735	655	1390
	3ème A.S TECHNIQUE	ECONOMIE	705	310	1015
		COMPTABILITE	565	315	880
	3ème A.S Sciences Islamique		545	–	545
	TOTAL Enseignement Secondaire		41755	5930	47685
TOTAL FONDAMENTAL + SECONDAIRE			75755	5930	81685

.../.

.../...

	CLASSES	Normal	Transitaire	Ensemble
Enseignement Technique	CAP Aide Comptable 1ère Année	525	1025	1550
	CAP Aide Comptable 2ème Année	395	915	1310
	CMTC 1ère Année	375	1430	1805
	CMTC 2ème Année	295	1170	1465
	CED	145	450	595
	TOTAL	1735	4990	6725
Administration - Gestion	Agent d'Administration	165	63	228
	Secrétaire d'Administration	150	70	220
	Attaché d'Administration	110	81	191
	Agent des Services Economiques	71	78	149
	Sous Intendant	69	79	148
	Intendant	58	61	119
	TOTAL	623	432	1055
Formation Enseignants	Niveau 1	2358	301	2659
	Niveau 2	3124	348	3472
	Niveau 3	7769	1100	8869
	TOTAL	13251	1749	15000

RECAPITULATIF	INSCRIPTION
[illegible]	34 000
[illegible]	47 635
Enseignement Technique	6 725
Administration Gestion	1 055
Formation Enseignants	15 000
TOTAL	104 465

Australia:
Higher Distance Education in Australia

Paul H Northcott
Deakin University
Australia

Context

In 1983, Milo Shott described distance education in Australia as being at the crossroads. Shott had just spent a year in Australia on leave from the Open University, United Kingdom, as the Visiting Fellow of the Australian and South Pacific External Studies Association (ASPESA). Shott's main conclusion was that without cooperation and resource sharing Australian distance education institutions would be unable to deliver the goods in an expanding market.

Also in 1983, two Australians, Willis and Johnson, in separate reports, endorsed Shott's general observations. Willis noted, concerning the adoption of the new technologies, that:

> The subject of coordination and cooperation in the provision of external studies, and the possibilities for improvement in those respects, have been discussed by Johnson. I can only add my opinion that, in the main, external studies is limping along much as it has always done and that, without a national initiative of an appropriate kind, there will continue to be talk, without matching achievement, about how much a country like Australia needs a comprehensive range of external studies, and how easily technology could make it possible ... (pp. 56-57).

Johnson (1983), stressed the need for a national approach so as to achieve a more rational use of resources:

> ... There is a need for more coordination amongst the providers to minimize waste of effort, to improve the range and quality of offerings and to decide which of the current proposals for expansion (or contraction, if there be any) best deserve support, and to what extent, and within what framework of supply ... (p.28)

Daniel (1987), in an accompanying paper for this meeting, writes:

> ... The lack of coordination among [Australian] providers is the problem most frequently identified ...(p. 26)

Ironically, therefore, in a meeting where one of the main themes is concerned with collaboration and networks, it is precisely the lack of such a coordinated network that is seen as the major problem for higher distance education in the host country. However, in this

this meeting we are more concerned with networking *between* countries rather than *within* countries. In preparing this discussion paper, however, major attention has to be given to the problems associated with the need for greater cooperation between higher distance education providers *within* Australia.

It would be wrong to give the impression that examples of cooperation and collaboration have not occurred and do not occur among Australian distance education providers. This is patently not so, examples to the contrary are on record and a national network is developing although there is still a long way to go (see Northcott, 1980, Johnson, 1983, *Review of Efficiency and Effectiveness in Higher Education*, 1986). A notable achievement was the signing of the External Studies Accord at Toowoomba, Queensland in 1983. The Accord set up a system of cross crediting of selected external courses across the universities of Queensland, New England, Macquarie, Deakin and Murdoch. A similar basis for resource sharing and avoidance of duplication is being developed within the colleges of advanced education through the Working Party on External Studies of the Association of College Directors and Principals (ACDP).

TAFE (technical and further education) external studies operations are single mode, unlike the higher education sectors of universities and colleges of advanced education, and operate on a state basis. It is hoped that more collaboration will occur between states so that a TAFE national network of external studies will occur.

The state commissions of postsecondary education have an important part to play, in collaboration with the Commonwealth Tertiary Education Commission (CTEC), in developing a national system of external studies in all three sectors of tertiary education.

In Australia, the term "distance education" is still not as widely used as the traditional term of "external studies". Australians, in general, still tend to be more comfortable with "external studies". Perhaps this is because of the widespread use of the "integrated mode" in which *internal* and *external* students are taught by the same staff and reference is made to *on campus* and *off campus* students. It is also interesting to note that the Commonwealth Tertiary Education Commission's Standing Committee on distance education has the title: Standing Committee on External Studies (SCET) and "External Studies" is the title of the chapter in the recently published *Review of Efficiency and Effectiveness in Higher Education*. In this report there is the tell tale phrase: "... This chapter examines the benefits of external studies or distance education, ..." (p.217).

In this paper the terms external studies, off campus studies and distance education are used interchangeably.

"Recent developments" for the purposes of this paper will be those that have occurred since 1983, a landmark year in my opinion given the reports already mentioned and the setting up of the Standing Committee on External Studies (SCET), in the following year. This paper draws heavily on the reports of the Standing Committee on External Studies either directly, as reflected in the advice given by SCET to the Triennial Reports of the Commonwealth Tertiary Education Commission (CTEC), or indirectly, to the Review of Efficiency and Effectiveness in Higher Education Committee.

Australian distance education is noted for its pioneering work, its diversity of styles and its pragmatism. On the last point of pragmatism; Wedemeyer (1977), observed that Australian distance educators were more action rather than research oriented. Nevertheless, since 1980, an increase in research output is evidenced. The stimulus of the journal *Distance Education*, published in Australia since 1980, has been important in encouraging the scholarly study of distance education. Research activities and publications now emanate

from distance education institutions, especially the major providers of higher distance education as they are required to include research in distance education as one of their responsibilities. Investigation and evaluation programmes funded by the SCET have also had a major influence in fostering research, especially those that have a national perspective and are inter institutionally and inter sectorally based (ie. include practice across universities, colleges of advanced education (CAEs) and colleges of technical and further education (TAFE), (see for instance Anwyl, Powles and Patrick, 1986; Northcott and Shapcott, 1986).

We take 1983, therefore, as our baseline date for the reasons already stated. An alternative date, however, could be 1979 with the publication of the Williams Report of that year. This report provided valuable advice and policy guidelines which led to the Johnson report in 1983 and the setting up of the SCET in 1984. Recommendation 17.35 and the associated discussion leading to this recommendation, laid the foundation for a national policy on higher distance education, viz:

> R17.35 The opportunities to extend access to education by the further development of external study opportunities have been emphasised in several chapters. There should be opportunities for students in small universities and colleges to extend the range of their studies by taking some courses externally. There should be greater opportunities for external students to combine courses from different universities or colleges, and there should be study centres in more and more varied TAFE colleges so that external students could get some tutorial help. The provision of an expanded network of opportunities for study would involve all three sectors of postsecondary education and would be a joint responsibility of the Commonwealth and State PostSecondary Commissions. Once there is provision in each State for external students to earn degrees and diplomas on the basis of courses taken at more than one institution, it becomes possible to produce a national plan for particular universities and colleges to specialise in the production of external studies materials, to produce a network of study centres, to mount an effective effort in the development of education technologies and to appraise external studies in a systematic manner, identify weaknesses and seek solutions to them (pp.779-80).

For an analysis of the Williams Report concerning distance education see Northcott, (1980).

Aspects of the Johnson Report (1983) which were taken up in the CTEC Report for the 1985-87 triennium included:

- Concern about the proliferation of external studies offerings and the need to rationalize by concentrating the provision of distance education, on "designated providers".

- The role of external studies in providing increased access to education through various means such as making distance education a more effective and attractive learning option through the use of new technologies; increasing the range of courses offered to off campus students by cooperative ventures such as contracting, cross credit arrangements, and the development of course combinations drawn from a common pool.

- Library access for external students, in particular the need for negotiation of reciprocal borrowing rights between institutions (see Crocker, Cameron and Farish, 1987);

- The potential of study centres (a) to promote inter institutional cooperation and (b) to provide support for off campus students and thus make external study a more attrac-

tive and feasible option for more people (see Northcott and Shapcott, 1986).

The Report for the Triennium 1985-87 vol.2 pt.1 Recommendations on Grants sets out the Standing Committee's objectives as:

1 to support a clearinghouse for information for all potential students as to the nature and availability of courses in all three sectors of tertiary education [universities, colleges of advanced education (CAEs), technical and further education (TAFE)];

2 coordination of the preparation and production of course materials so that ready access is available to the best quality materials and economies of scale are achieved in their production;

3 in consultation with the states, development of regional resource centres in TAFE colleges and, where appropriate, in universities and CAEs for the use of external studies students;

4 investigation and encouragement of technological developments relevant to the provision of external studies;

5 provision of advice to the Commission on the need for rationalization in provision of external studies.

Finally, as a background to recent developments in higher distance education in Australia let us refer to Gough (1984), on the philosophy of distance education, which he wrote predominantly from an Australian perspective. Gough noted that:

> In earlier days the keyword of distance education was *access*. The major concern was to allow students who would otherwise be denied educational opportunities to gain access to courses. Not that other matters were of no concern but without access they were of no consequence. Once access was no longer an issue the keyword became *equivalence*. The concern was now that students taught at a distance should receive an equivalent education and an equivalent qualification. It was the attempt to make distance education academically respectable. In recent years there has been another shift. In general, distance education is accepted as a valid although still regarded by some as a less desirable form of education. Now the emphasis of distance educators is on *excellence* .... Access, equivalence and excellence are the key words (pp.35-36).

In association with access we should add *equity*. Access and equity remain key issues in Australian higher distance education as they do in distance education throughout the world.

Gough went on to state how important commitment to cooperation among the providers would be in advancing the three key issues that he had identified. One wonders why he did not identify collaboration, per se, as a key issue. It is possible that in three years cooperation and resource sharing have grown even more important in our thinking.

External students

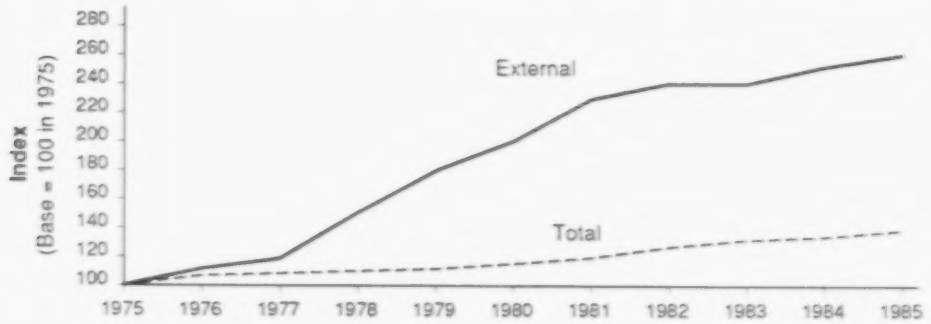
Figure 1, shows that in the decade 1975-1985, the number of Australian students enrolled in external studies increased much more rapidly than total enrolments. Figure 2, shows that in universities the number of students doubled to over 16,000 in 1985 and in CAEs the

numbers trebled to be almost 29,000. Thus in 1985, students enrolled in higher distance education programmes in universities and CAEs totalled 45,000 and accounted for 12% of total higher education enrolments. To this total can be added over 55,000 external students in the TAFE sector.

In summary a typical external student is:

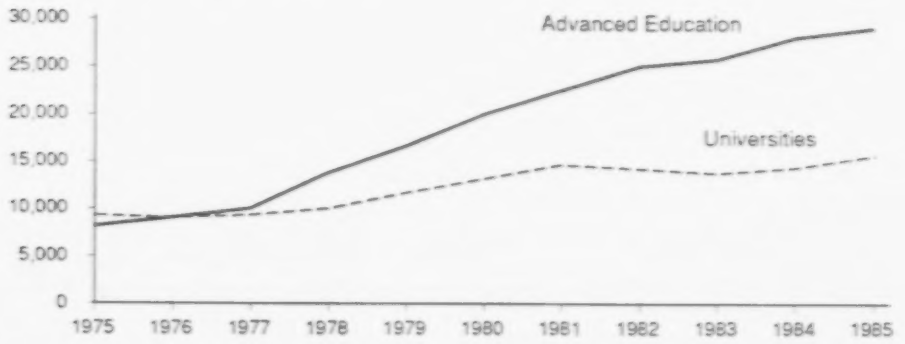
- over 30 years of age;
- a teacher or other professional person engaged in upgrading or updating his or her qualifications. (The proportion of external students who are teachers has steadily decreased);
- enrolled in arts, education or business studies;
- experienced to some extent in study at the tertiary level;
- engaged in full or part time employment.

Figure 1 Relative growth in higher education external and total students, 1975 to 1985.



Source: *Review of Efficiency and Effectiveness in Higher Education* (1986) p.217.

Figure 2 Numbers of external students in universities and colleges of advanced education, 1975 to 1985.



Source: *Review of Efficiency and Effectiveness in Higher Education* (1986) p.218.

External students include people from country towns and remote settlements and also from metropolitan centres. Some enrol as external students as this is their only option (remoteness, physical handicap, prisoners) others enrol in external studies because it is more convenient for them to do so e.g. shift workers and others who are unable to fulfil the commitment to attend at scheduled class times.

Anwyl, Powles and Patrick (1986) have identified who are the present external students and also the potential students. Currently, studies are being undertaken of specific groups of existing and potential external students. One such group is school leavers who are conventionally regarded as unsuited to external studies. This myth, however, is being challenged by Guthrie and Krzemionka (1987) who note that 16-19 year old external students usually have a supportive environment of family and friends which on campus students who move away from home do not have.

Demand for external studies in the 1988-90 triennium is expected to be particularly strong in three new areas:

- nurse education;
- continuing education and further education not necessarily leading to an award;
- foreign students enrolled overseas. (Especially in Hong Kong, Malaysia and Singapore).

A major issue concerning level of enrolment in external studies is the $250 higher education administration charge (HEAC). This student charge was instituted for the first time for all reenrolling students in 1987, on campus as well as off campus. Power and Robertson (1987), in an interim report on the effects on external students of HEAC record that:

> ... the key factor distinguishing those withdrawing because they could not afford the charge from other groups of withdrawing students (and continuing students) were the number of dependent children and gross household income. The results suggest that in the case of low-modest income families with dependent children, the additional costs associated with the administration charge may be the straw which forces withdrawal: the immediate needs of the children and the family are more pressing than the educational needs of the parent undertaking an external course (p.3).
>
> -
>
> ... on early indications, most institutions expect a reduction in demand for external studies courses of the order of 10% and with some increase in the average number of subjects being taken. Our preliminary data indicate the shortfall is of the order of 7-8% among all institutions, with students taking up to 40% more subjects in their second year (p.18).

"Overloading" by taking more subjects in a year than is advisable appears to be a potential problem resulting from HEAC.

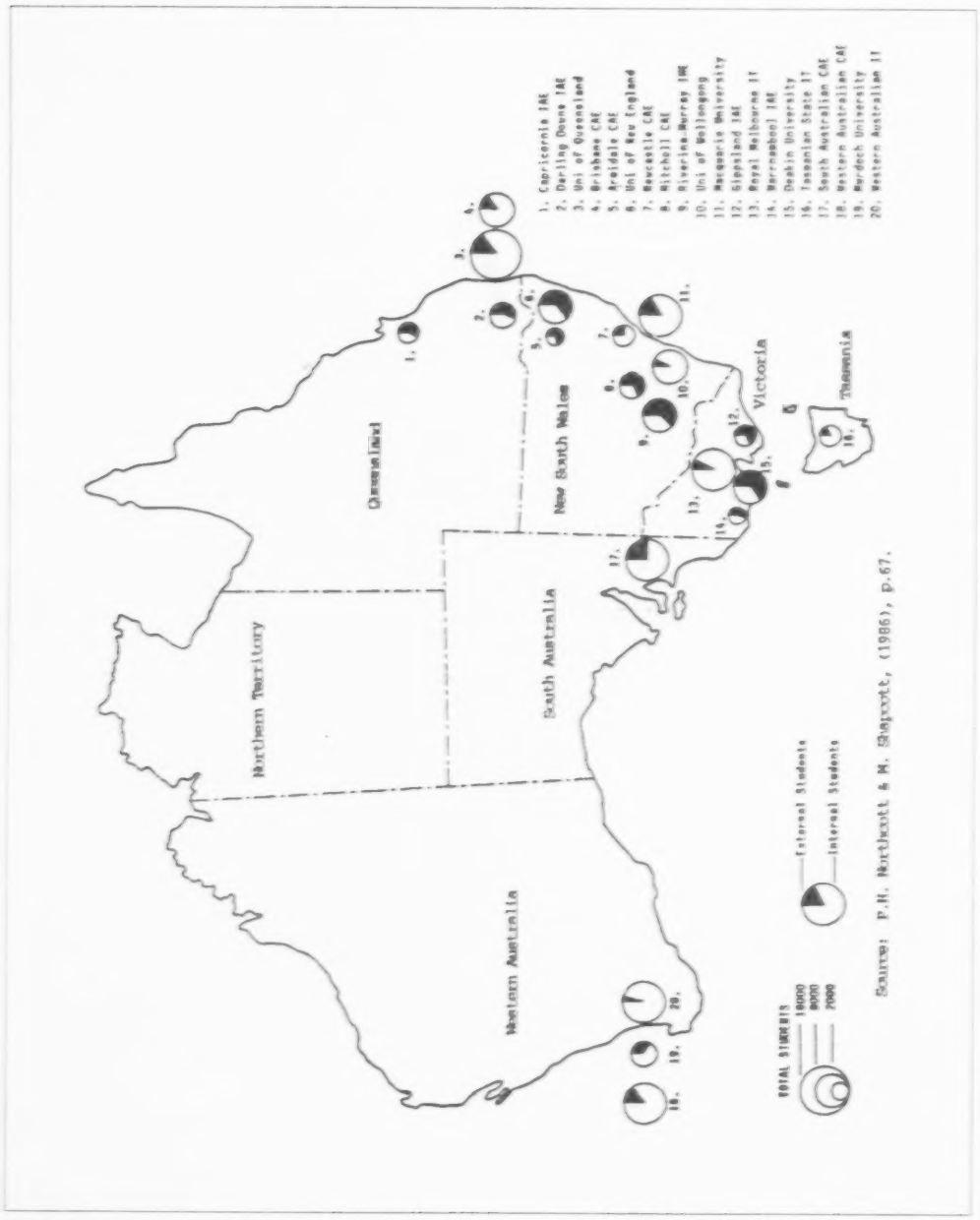
External providers

There are now 40 institutions offering courses in higher distance education in Australia, seven of these are universities and 33 are CAEs. Thus, average enrolments per institution in 1985 were 2,286 for universities and 879 for CAEs. Figure 3 shows 20 of these main

providers. From figure 3 it can be seen that the proportion and total number of external students varies appreciably between institutions.

Figure 3 points up the "dispersed and integrated" characteristic of higher distance education in Australia. Provision is "dispersed" through many institutions, many of which are relatively new; i.e. they were founded in the late 1960s and 1970s and are regional centres located in rural areas and are dependent on external enrolments for them to be viable. They are "integrated" because they are dual mode, i.e. teach both on campus and off campus students.

Figure 3



The result of this pattern of provision has been:

> ... a fragmentation of resources and unnecessary duplication of effort. The failure to make the most of potential economies of scale has meant that many courses have been offered at a relatively high cost, and as a consequence in some cases at a lower standard than might be attained. It has also limited the extent to which advantage has been taken of the potential of the new technologies ... (*Review of Efficiency and Effectiveness in Higher Education*, pp.222-223).

The aim is to rationalize and coordinate external studies in higher distance education in Australia so that by 1990 there will be:

> a network of tertiary institutions in all sectors collaborating to ensure provision of high quality distance education in a coordinated and economical way ... (SCET, April 1987, p.77).

It is envisaged that by 1990 there will be a system of designated providers. Some will be classified as *principal* providers and others as *specialist* providers. The principal providers will have a broad range of external courses on offer and a fully developed distance education infrastructure. The specialist providers will have a narrow range of courses and will collaborate with major providers in developing and delivering their courses. Some institutions may combine their resources to become a single, principal provider.

By 1990 there will be 12 or fewer principal providers. On present indications, one can reasonably confidently predict that the following will be principal providers:

New South Wales: Mitchell CAE; Riverina Murray Institute of Higher Education; University of New England.
Queensland: Capricornia Institute of Advanced Education and Darling Downs Institute of Advanced Education.
Victoria: Deakin University; Gippsland Institute of Advanced Education; Warrnambool Institute of Advanced Education.

This list covers only three states and mentions two universities and six CAES. In 1985, the University of New England and Deakin University accounted for 63% of all university external enrolments (36% and 27%, representing actual enrolments of 5997 and 4427, respectively). However, by international comparisons the total enrolments are low.

Guiton (1986), notes that changes to the current pattern of provision of Australian higher distance education will require us to face a dilemma:

> ...If we are to take advantage of new technologies for distance education delivery we must reduce, if not eradicate, duplication in course offering. But, if we are to offer students the same awards regardless of study modes, we must maintain integrated curricula serving both internal and external studies within the awarding institutions. The challenge therefore is to demonstrate that collaboration can serve the interests of "On Campus" teaching and learning as well as those of distance education. "No Mode is an Island" but recognition of this is all too often lacking (p.1).

Guiton also notes that as a result of the rationalization of the number, status and roles of institutional providers of external courses, economies of scale might be reaped at the course materials preparation stage at the expense of the quality of student support. In the discussion on economies of scale and quality he notes that:

> ... There is however little comment on the conditions necessary to ensure an acceptable level of teaching or tutoring effectiveness. Perhaps then we are led back to the dilemma posed at the outset, one which seems to lead inexorably towards increasing centralisation of course provision and an ever widening gulf between academic course writer and student consumer. When this happens, the challenge facing us will be to ensure that efficient delivery is not attained at the expense of effective learning (p.12).

In saying this, however, the economic imperative is not strong as the *Review of Efficiency and Effectiveness in Higher Education* notes:

> Because external studies is only a relatively small proportion of total higher education activity, the potential savings through rationalisation are not large ... (p.238).

The Review correctly sees, however, economies of scale as being reaped mainly in the area of course preparation but gives reassurance that:

> Finally, even after the reduction in the number of providers there will still be a range of principal providers and specialist providers in each sector and a decentralised system with opportunities for external study in each state (pp.234-235).

Technology

Australian higher distance education is interested in the potential that technology can provide for increased efficiency and effectiveness in delivering its programmes. Particular attention is being paid to the use of the new communication technologies which use combinations of print, computers, the telephone and audio and video cassettes.

The use of technology is governed by two considerations: educational effectiveness and cost benefit. Thus whereas AUSSAT, the domestic satellites launched in 1985, could be used to deliver televised programmes to remote locations, this could only be achieved by high cost in transmission and ground stations and associated equipment. The use of such technology becomes cost effective when there are large numbers of students enrolled. This is not the case in Australian higher distance education as we have already seen. It is cheaper to distribute video cassettes to all students than to pay the costs of satellite transmission and equipment. For the same reason, broadcast televison and radio are not used, although they possibly could be used in continuing education where there would be larger student numbers. The added problem of educational broadcasts is that they are likely to be aired in the early hours of the morning or very late at night. This discourages providers from using broadcasting. Some use has been made, however, in Western Australia, of FM subcarrier radio with telephone talkback and by the University of New England, Armidale, New South Wales, in collaboration with the Sydney radio station 2SER-FM of radio talkback (Gelonesi and Arger, 1987).

The Australian Society of Accountants has used video conferencing in its continuing professional development programme. Such national, well resourced bodies are better placed to use such technology compared with the publicly funded, relatively small higher distance education providers who are not in a position to recoup costs or to provide the up front money. Currently, evaluative research is being undertaken in the use of electronic mail and computer conferencing. The use of packet switching reduces communication costs and provides opportunities for interaction among students and among students and staff. During this meeting examples of the use of electronic mail and computer conferencing will be demonstrated.

Teleconferencing and teletutorials are already widely used in Australian higher distance education, while desktop publishing facilities are enabling high quality printed materials to be produced in volume with significant reductions in labour cost and in time.

The applications of technology are having an impact on the administrative aspects as well as on course materials preparation and student support services as this quotation from the SCET (1986) succinctly expresses:

> Computerisation of records and administrative process and the use of computers in telecommunication have greatly improved external administrative systems and transmission of data between them. A national educational electronic mail network and access to videotex databases on courses available, institutional admission requirements and other such topics could be of great assistance both to institutions and students or prospective students. This is an area where inter- institutional cooperation is essential (pp.69-70).

A major continuing research problem facing distance educators is the selection and use of an increasing array of technologies in an integrated, educationally effective and cost effective manner. Thus, application of the new technologies requires an evaluation of the human, technical and economic aspects of their use. A Deakin University project, as part of the Australian Open Learning Information Network (AOLIN), is addressing these issues (see Northcott 1986).

Regional cooperation

Australia is part of a wider region which includes New Zealand and the South Pacific. This is apparent in the formation of the Australian and South Pacific External Studies Association (ASPESA). This organization was founded in 1973 and a commemorative book was published in 1984 which records the history of ASPESA in its first decade (see Smith, 1984).

ASPESA has close affiliations with the International Council of Distance Education (ICDE).

Australia has developed close links with distance educators in Asia, especially SE Asia "our near neighbours".

As a member of the British Commonwealth, Australia has a special affinity with distance education in Commonwealth countries, particularly with the United Kingdom and Canada. Consultants from Deakin University, Australia recently undertook a study, funded by the Commonwealth Secretariat, into the role of distance education for manpower development in the Southern Africa Development Coordination Conference (SADCC) region, (Jevons, Northcott and Polhemus, 1987). This region includes the anglophone countries of Botswana, Lesotho, Malawi, Swaziland, Tanzania, Zambia and Zimbabwe and the lusophone countries of Angola and Mozambique.

Cooperation in distance education could be strengthened at the regional level if distance education is seen as contributing to the socio economic needs of the region. The SADCC initiative just mentioned has the stimulus of providing manpower training that will serve the development of the region as a whole.

Particular aspects of cooperation could include collaborative research projects on common themes and problems, information and staff exchanges, exchange of course materials and perhaps, in a few cases, collaborative course development. Collaborative use of facilities

such as libraries and examination centres and their associated administrative infrastructures will also foster cooperation among distance educators. The use of new technologies such as electronic mail and computer conferencing that link distance educators within a region will be a strong factor in fostering collaboration among them. The use of the ATS 1 PEACESAT satellite in Australia between 1982 and 1985 demonstrated how weekly meetings on the network fostered a greater knowledge and awareness of distance education across Australia, New Zealand and the South Pacific (see Livingston 1984). The Australian Open Learning Information Network (AOLIN) is achieving a similar function using Australia Telecom's electronic messaging system telememo (see Bishop and Castro, 1986).

Australia's membership of OECD and Unesco make it a contributor to the advancement of adult education, in general, and of educational technology. The work of the Centre for Educational Research and Innovation (CERI) of OECD is of interest to Australian distance and adult educators. Unesco provides a global forum for collaboration in the study and practice of distance education as this meeting witnesses.

References

Government papers

Education, Training and Employment, Report of the Committee of Inquiry into Education and Training (Williams), February, 1979, AGPS, Canberra.

Tertiary Education Commission Report for 1982-1984 Triennium, February, 1981 (5 vols) and August, 1981 (2 vols), AGPS, Canberra.

Tertiary Education Commission Report for 1985-1987 Triennium, vol 1, parts 1-3, April 1984: vol 2 parts 1 and 2, September 1984 with a supplementary report in March 1985.

Review of efficiency and effectiveness in higher education, Report of the Committee of Enquiry, September, 1986, AGPS, Canberra.

External Studies in the 1988-90 Triennium.
Advice of the Standing Committee on External Studies to the Commonwealth Tertiary Education Commission.
Report for 1988-90 Triennium, April 1987, vol.1: part 2, appendix 5, pp.57-89.

Books and articles

Anwyl, J., Powles, M., Patrick, K. (1986)
Who uses external studies? Who should?
University of Melbourne. Report prepared for the External Studies Standing Committee of the CTEC.

Bishop, R and Castro, A.S. (1986)
"AOLIN, a network for educational researchers" in The Steering Committee of AOLIN (ed.), *Australian Open Learning Information Network. The role of the Australian Open Learning Information Network*. Available from A.S. Castro, Deakin University, Victoria, 3217, Australia.

Crocker, C., Cameron, M and Farish, S. (1987)
A national library card for external students? An investigation into a possible system of borrowing privileges for all external students at all tertiary libraries, Deakin University, for CTEC, April.

Daniel, J.S. (1987)
World Trends in Higher Distance Education and opportunities for international cooperation. Paper prepared for Unesco Higher Distance Education Meeting, held at Deakin University, Australia 6-11 September, 1987.

Gelonesi, J. and Arger, G. (1987)
A 2SER-FM Project. "Talking to New England"
Sydney Educational Broadcasting Ltd. (2SER-FM), Sydney, 29 January, 1987.

Gough, E. (1984)
"Towards a philosophy of distance education" in K. Smith, ed., *Diversity Down Under in Distance Education*,
Darling Downs Institute Press, Toowoomba, Queensland, pp.19-37.

Guiton, P. (1986)
Notes prepared for Janet Jenkins, November 1986.
Collaboration in External Studies in Australia. Commonwealth Cooperation in Open Learning Project, London, U.K.

Guthrie, H. and Krzemionka, Z. (1987)
Distance education needs for 16-19 year olds (draft). A study by the TAFE National Centre for Research and Development Ltd., for the External Studies Standing Committee of the CTEC.

Jevons, F.R., Northcott, P.H., and Polhemus, J.H. (1987)
Southern Africa Distance Education Project Proposal. April.
Submitted by F.R. Jevons, P.H. Northcott and J.H. Polhemus of Deakin University, Victoria, Australia 3217 as consultants to the Southern Africa Development Coordination Conference, the Government of Swaziland and the Commonwealth Fund for Technical Cooperation.

Johnson, R. (1983)
The provision of external studies in Australian higher education, June.
CTEC, Canberra.

Livingston, K.T. (1984)
"Satellite communications and teleducation in Australia", ICDE Bulletin, 6, pp.54-57.

Northcott, P.H. (1980)
"The impact of the Williams Report on the future directions for external studies",
Selected papers from ASPESA Conference, Perth, 1979. *Experiences in Teaching External Students*, issued by the External Studies Advisory Group, University of New England, Armidale, NSW, no.5, June, pp.32-45.

Northcott, P.H. (1986)
"A Deakin Project on computer-based communications" in The Steering Committee of AOLIN (ed), *Australian Open Learning Information Network. The role of the Australian Open Learning Information Network.* Available from Deakin University, Victoria, 3217, Australia.

Northcott, P.H. and Shapcott, M. (1986)
The role of study centres in overall student support services in distance education. Deakin University. Report prepared for the External Studies Standing Committee of the CTEC.

Power, C. and Robertson, F. (1987)
Effects of administration charge on participation in higher education by external students. Interim Report, March, 1987. National Institute of Labour Studies, Flinders University of South Australia for the CTEC.

Shott, M. (1983)
"External Studies in Australia at the crossroads? (An outsiders view)" *External studies Gazette,* September 1983, vol.27, no.3, p.1-7.
Paper delivered to the Australian and South Pacific External Studies Association Biennial Forum, 6th, held at the Darling Downs Institute of Advanced Education, Tooowoomba, Qld., July, 1983.

Smith, K. (1984),
"The story of ASPESA" in K. Smith, ed., *Diversity Down Under in Distance Education,* Darling Downs Institute Press, Toowoomba, Queensland, pp.3-18.

Wedemeyer, C.A. (1977),
"Models in Australia and their international counterparts" in *External Studies: the art of making ends meet,* ASPESA Forum, 3rd., Adelaide, 21-25 August.

Willis, A.H. (1983)
The impact of technology on the teaching process in Australian Universities, October, CTEC, Canberra.

Cameroon:
The Beginnings of Higher Level Distance Education in Cameroon

Nalova Lyonga
University of Yaoundé
Cameroon

The authorities of The University of Yaoundé took an active interest in educational technology and in the growing area of distance education only as recently as 1985. Several factors provoked this interest, among which were the fast growing student population, inadequate space and infrastructure and the ill balanced student/teacher ratio. Cameroon's sole university has a student population of around 18,000. This figure, which is expected to rise to over 20,000 in the next few years, poses a major problem in terms of the quality of the education provided by the university. Whereas the student population has grown in leaps and bounds in two decades, the infrastructure has undergone no proportionate change. The pedagogic methods have remained conservative, depending mainly on the oral lecture supplemented by the chalk and blackboard. The following extract from a feasibility report by the British Council Media Consultant underscores Yaoundé University's interest in applying new and beneficial methods and techniques:

> The constraints currently affecting the development of the University of Yaoundé all eventually relate to the need for a better quality of pedagogic instruction... Television and video are unlikely to provide the only solution but they can form a vital element in a strategy which can improve the overall quantity and quality.

As a result of the British Council Media Consultant's study, a workshop was organized from June 8-13, 1987 at Yaoundé University, with the participation of the British Council (experts from the Media Department at Cambridge University) and Guelph University in Canada. The workshop had a twofold aim: to introduce to heads of faculties and a select committee of Yaounde University staff, the applications of advanced communication technologies and to study the strategies for implementing distance education courses at Yaounde University. The following excerpts are from the Workshop Report and show:

- an analysis of the current constraints at the university by the Vice Chancellor, Professor Jacob Ngu: i.e. rapid growth of the student population; high student staff ratios; high failure rates and

- the description of a pilot distance education course: the Guelph Yaoundé Project.

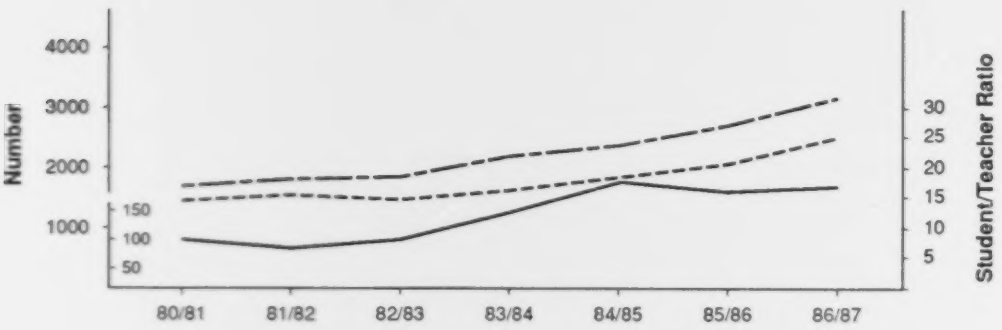
Growth of the student population

From an academic standpoint, the single most pressing problem that we face at the University of Yaoundé is how to cope with the large number of students enrolled in our facul-

ties and professional schools. There has been a steady increase of our student population over the last seven years. It is particularly instructive to look at the growth patterns in specific schools and faculties.

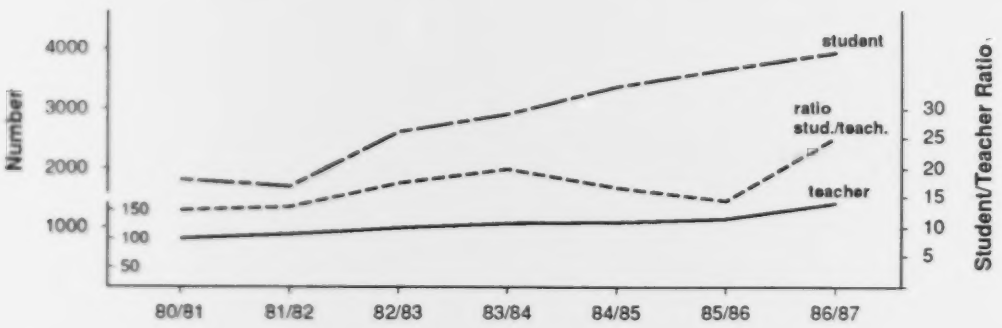
Figure 1 shows the growth pattern in the Faculty of Arts: the number of students; the number of teaching staff and the student/teacher ratio. Total arts students are now 3,000. The number of teaching staff, on the other hand, has remained fairly constant during this period; from 100 lecturers in 1980/81 to 125 in 1986/87. The student/teacher ratio, therefore, shows an increase in the last three years from 15:1 to approximately 25:1.

Figure 1: Evolution of Student and Teaching Staff numbers, 1980 - 1987
Faculty of Arts



In the Faculty of Science the patterns are similar (see figure 2). Student enrollment has more than doubled since the 1981/1982 academic year to nearly 4,000 in 1986/1987. One observes that in contrast to the moderate growth of the student population as between the 1980/81 and 1981/82 academic years, the rise in student numbers in later years has been significantly greater. Student enrollment 1986/87 in the Faculty of Science was almost double that of 1980/81.

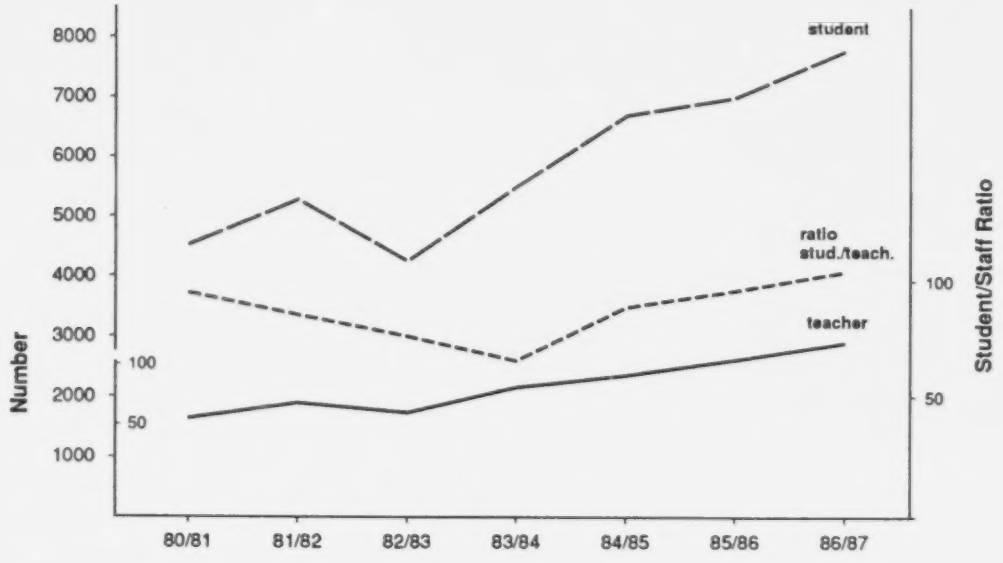
Figure 2: Evolution of Student and Teaching Staff numbers, 1980 - 1987
Faculty of Science



Again, the number of academic staff has shown only a modest increase, from 100 in 1980/81 to 130 in 1986/87. The student/teacher ratio therefore stands at 24:1, with a sharp increase of 67% occurring during the past year alone.

These trends (see figure 3) are repeated in the Faculty of Law and Economics. From 4,200 in 1980/81 the student numbers now stand at 8,200. The growth in teaching staff numbers has not kept pace with this explosion in the student population. The student/teacher ratio in the Faculty of Law and Economics has remained very high. It currently stands at 99:1.

Figure 3: Evolution of Student and Teaching Staff numbers, 1980 - 1987
Faculty of Law and Economics



What is clearly demonstrated by these graphs is that the number of teaching staff has not kept pace with the growth in student enrollment.

In contrast to the faculties, the professional schools have rather limited student enrollments. Figure 4 shows, side by side, the number of students enrolled in the first, second and third years in the faculties and the professional schools during the 1986/87 academic year. Observe, for example, that whereas the largest number in any one year in the professional schools is the first year in the School of Engineering (ENSP) with 108 students, the smallest number in the faculties, is 413 students in the third year in the Faculty of Science (third year Arts has 450).

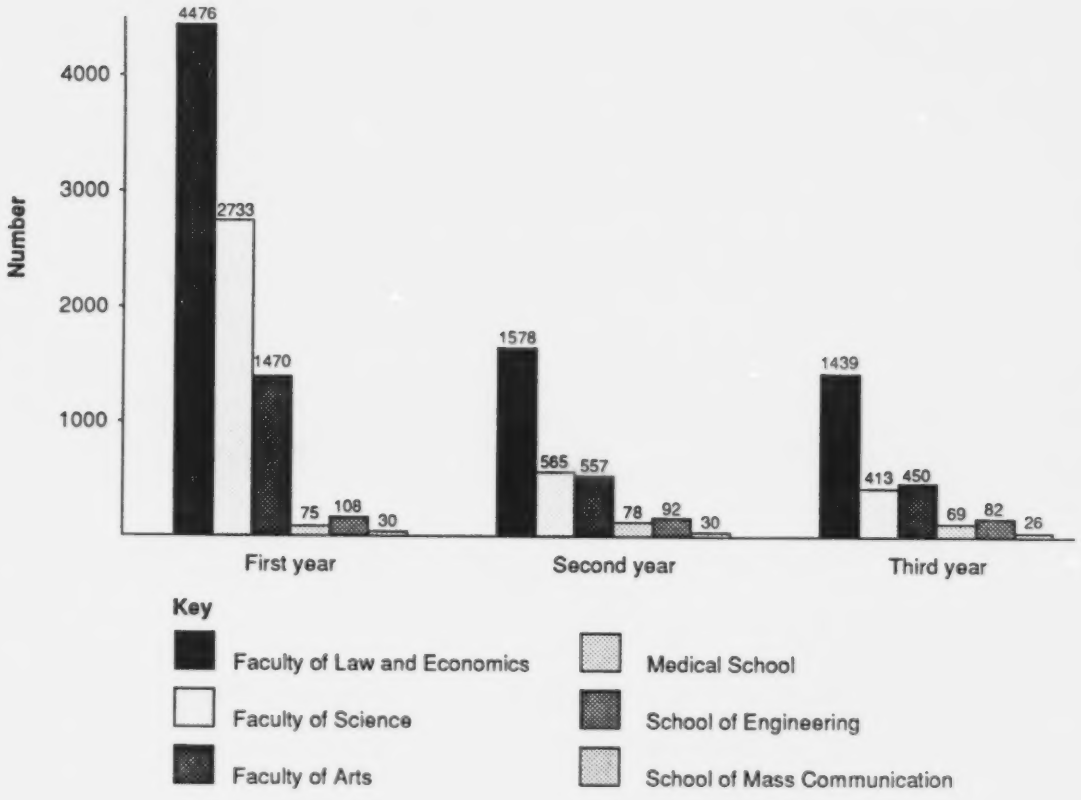
Student/teacher ratios in the professional schools are 4.5:1, 4.7:1 and 10.6:1 in the Medical School (CUSS), School of Engineering (ENSP), and the School of Mass Communication (ESSTI), respectively.

Failure rates

Learning at the university seems to have been one casualty of the large number of students. The failure rates in the faculties are alarmingly high. The percentage of students who failed in each of the three years in the faculties during the 1985/86 academic year is

shown in figure 5. The highest failure rates occurred in the first year; 80% in the Faculty of Science, 68% in the Faculty of Law and Economics, and 51% in the Faculty of Arts. The situation was significantly better in the case of second year students, where failure rates ranged between 24% and 36%. In the Faculty of Arts, and the Faculty of Law and Economics, failure rates in the third year were down from those among second year students. However, the reverse was true in the Faculty of Science where third year students registered a failure rate of 42%, as compared to 35% for second year students.

Figure 4: Number of Students, by Faculties and Professional Schools



These patterns for the 1985/1986 academic year are fairly representative of the situtation in previous years; i.e. failure rates are very high in the first year, but decrease steadily in the final two years. The reasons for these are various and complex. However, the figures indicate a positive correlation between class size, and therefore high student/teacher ratio, and poor student performance in examinations.

In the professional schools, failure rates are approximately one order of magnitude lower than in the faculties. Figure 6 shows the situation in the School of Engineering (ENSP) and the Medical School (CUSS) during the 1985/1986 academic year. In several cases all the students passed on to the next class. The worst case occurred in ENSP where 11.5% of the first year students in the five year programme ("Ingenieur de Conception") failed.

Figure 5: Percentage failure rates 1985/86, by Faculty

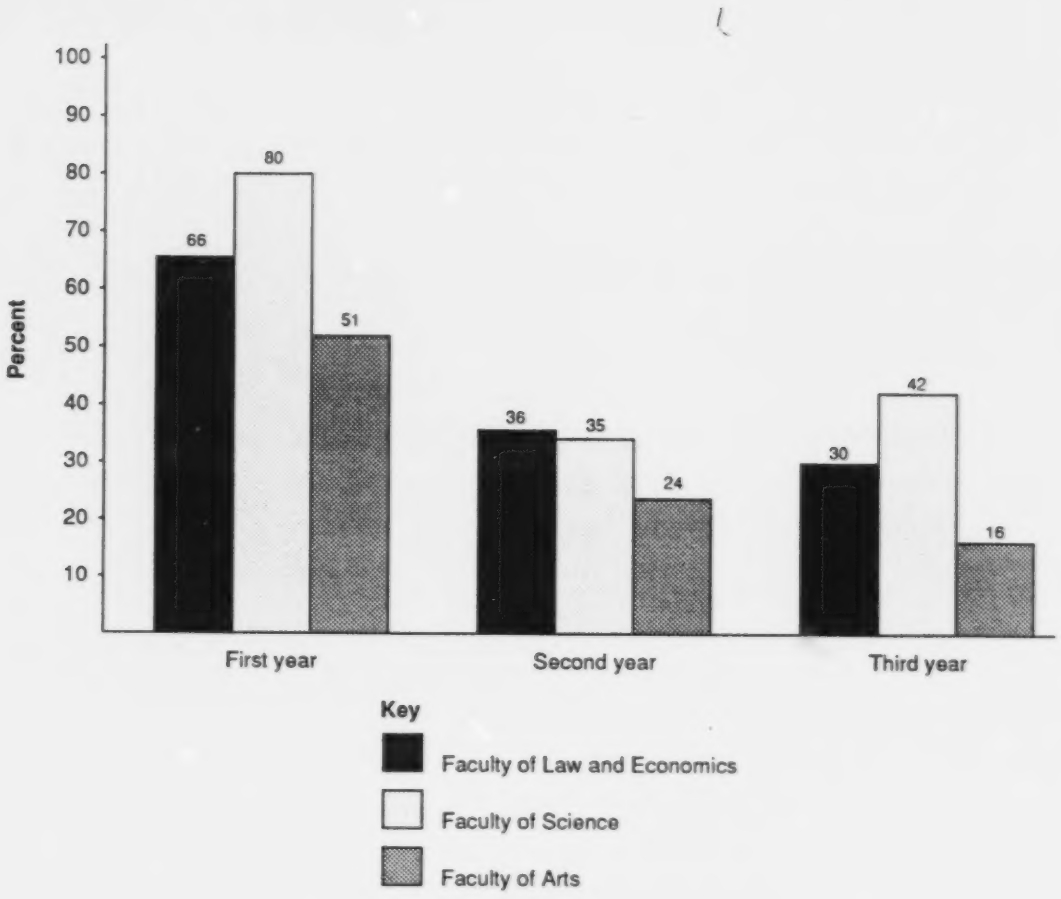


Figure 6 indicates that other factors besides student/teacher ratio influence learning. CUSS and ENSP have about the same student/teacher ratio, less than 5:1. However, the average of the failure rates in the first three years at CUSS is about 25% of the corresponding figures for ENSP. Furthermore, within CUSS the failure rate in the first cycle (first three years) is less than 15% of that in the second cycle (final three years). We speculate that this difference within CUSS is due, to a large degree, to the presence of a large audio visual component in the teaching programme in the first cycle, which so far, has not been introduced in the second cycle. These selected cases exemplify the complexity of the subject of pedagogy.

Selectiveness of professional schools

The significant differences in failure rates between the faculties and the professional schools may be explained, at least in part, by the difference in admissions procedures in the two types of university institutions. All suitably qualified students are admitted into the faculties. In contrast, the number of places in the professional schools is limited by statute. Admission is through competitive examination among suitably qualified candidates, some of whom are students in the faculties.

Figure 6: Failure rate 1985/86, by Professional Schools

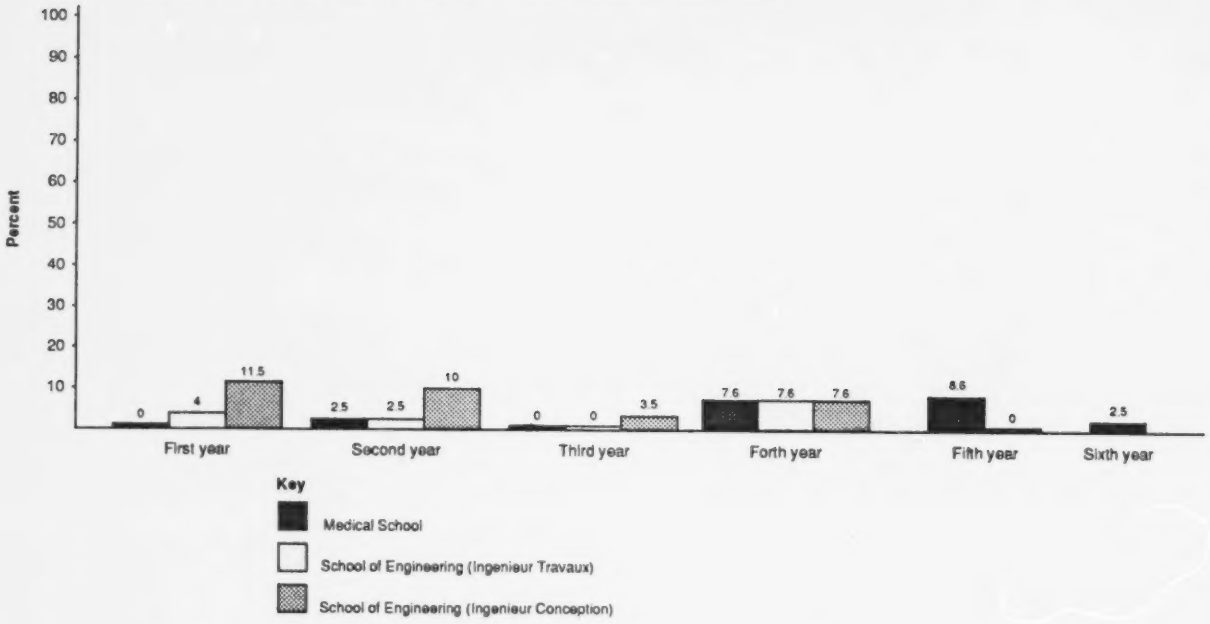


Figure 7: Selection for Professional Schools 1985/86

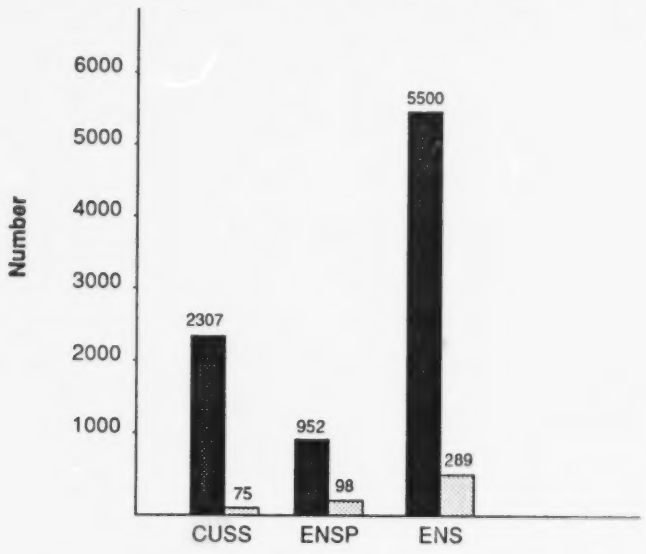


Figure 7 shows the number of students who wrote the entrance examination for the three professional schools for admission during the 1986/87 academic year. The Medical School (CUSS) was the most selective, admitting only 3.25% of the 2,307 candidates. In the case of the School of Engineering (ENSP) 98 students were selected from a pool of 952, i.e. 10.3% of the candidates were selected. For admission into the teacher training college (ENS) there were 5,500 candidates only 289 (5.25%) of whom were selected.

Operational structure for improving instruction

We believe that the quality of teaching and evaluation at the university can be improved despite the large student population. What is required is an operational structure which takes into account all the essential and diverse elements of a good teaching/learning system. One such model is depicted in figure 8: a compendium of interrelated components of research pedagogy and information systems.

A good teaching/learning system should be based on sound pedagogic practices. This requires that curricula be developed and not simply allowed to evolve. Along with curriculum planning goes teaching methodology. We must continually seek the best ways of presenting the material so that it can be readily assimilated by the students. Delivery systems should therefore exploit modern educational technologies, video and television, for example, whenever these are appropriate. Finally, pedagogic practices should be under constant review. Courses, programmes, teaching methods, and examination methods should be evaluated to determine how effective they are in meeting the university's objectives.

Research is required to improve pedagogy. The peculiarities of the environment, socio economic and cultural factors do play a significant role in many aspects of Science, and thus should be taken into account in curriculum development. It is through active research that these peculiarities can be identified and their roles delineated. Research should have the following characteristics:

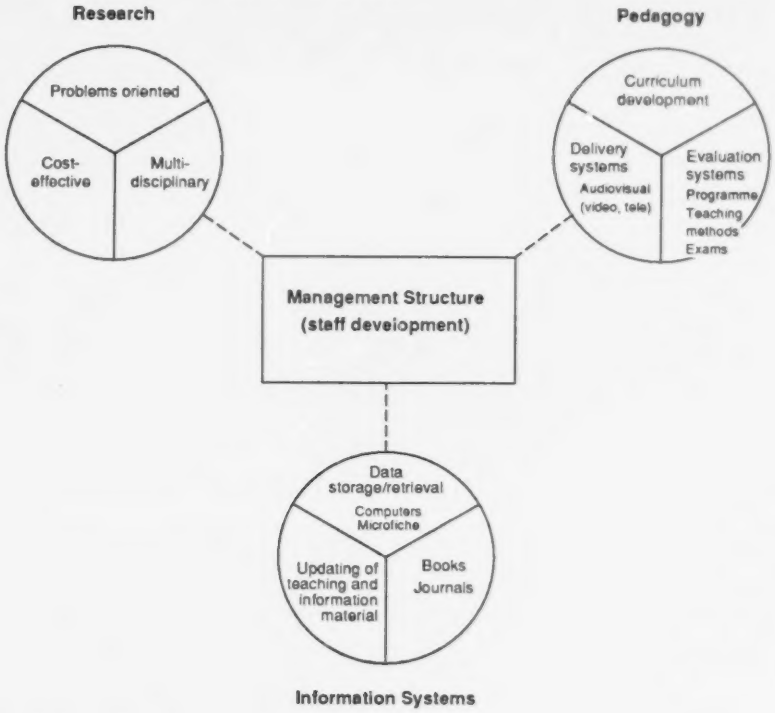
- it should be problem oriented, i.e. it should seek to solve well defined problems;
- it should be multidisciplinary so as to benefit from various perspectives of the problems to be solved;
- it should be cost effective.

Information systems play a key role in the effectiveness of a teaching/learning system. In addition to a traditional library with books, journals, etc., there should be provision for using other forms of information storage and retrieval such as computers and microfiche. Finally, all of the teaching material and stored information should be updated frequently to reflect the current state of the art in the fields which they cover.

These seemingly unrelated units with different objectives and characteristics should be linked by a management structure which uses a systems approach to education. This type of management recognizes that specialised staff must be trained to man the various units of the teaching/learning system.

We believe that the problems of the university which we have highlighted above can be solved by the approach of the model which we have proposed. We welcome critical review of these ideas.

Figure 8: Model of a Teaching/Learning system



Course on African literative and the modern world

Background

This course has been developed as part of the Guelph Yaoundé Project (GYP) in distance education.

One important way of improving the quality of the circumstances within which lecturers teach at the universtity, is to improve the quality of teaching at the secondary school level. The Teacher Training College (ENS) provides one of the circumstances in which university teachers are brought into direct contact with secondary education, and in which they can exercise a very positive influence over the quality of students the university admits. The first cycle at ENS provides fairly well qualified staff for secondary schools. But students who have gone through the second cycle (available only in Yaoundé) make far better teachers in terms of the depth and breadth of their training.

Students who do the first cycle in Yaoundé have no problem getting into the second cycle because they are concurrently enrolled in degree programmes in their various fields in the faculties. Thus, upon completion of the first cycle programme they also possess a first degree which is the basic entry requirements for admission into the second cycle.

Students in Bambili are not exposed to degree course facilities, and so scarcely gain entry into the second cycle upon graduation from ENS. The quality of their teaching suffers as a result of this lack of opportunities for further training. About two years ago members of the Guelph Yaoundé Project recognized this problem. Discussions were held with the authorities and students at ENS Annex Bambili and with representatives of Guelph University. The need to develop a programme to facilitate the students' studies directed towards the

various first degree examinations at the University of Yaoundé was recognized as pertinent and imperative. To this end it was decided that a pilot project be undertaken to ascertain the feasibility of implementing a distance education programme involving Guelph and Yaounde Universities, to cater for the needs of the students of ENS Annex Bambili:

Enrollment - 40
Place - classroom with a seating capacity of 100
Attendance - 40
Duration - students work individually; meeting with a lecturer once a monththrough-out one semester.

General objectives

- To improve students with requirements for the B.A. degree at the University of Yaoundé;
- To strengthen existing ties with Guelph through the Guelph-Yaoundé Project;
- To explore new teaching methods by the use of various media.

Specific objectives

- To design and develop one course by distance education;
- To explore the use of specific media facilities - audio cassettes, slides, print, film strips, etc.;
- To test acceptance of the method by the students.

Methodology

- Existing facilities in Guelph will be used for the production of slides and packaging.
- The existing facilities of the Mobile Resource Centre of the Guelph Yaoundé Project will be used for instructional purposes.
- Audio cassettes will be made by Cameroonian students, technicians and staff.
- A course team approach will be used in the design and writing of the course. The course team will comprise Cameroonian and Canadian staff members.

Schedule

The design and write up of the course schedule should take two years. This course is expected to run for 4 years.

Budget

	(Amounts in FCFA)
Course design	110,000
Course writing	1,100,000
Development support and transcription	330,000
Production, packaging and distribution	330,000
Audio tapes and cassettes	1,540,000
Total	3,410,000

Facilitating factors

. Special relationship developed between the university and foreign bodies working in Cameroon and who have an interest in educational projects. The British Council have been a valued partner in various projects undertaken by the university. Over the years we have collaborated in areas ranging from the teaching of English for Academic Purposes (EAP) in the university's bilingual programmes to the training of academic staff for the future development of the university.

. Institutional cooperation between Guelph University in Canada and the University of Yaoundé. Both universities have jointly developed a project for the last 7 years which aims at producing reading materials for schools and colleges from Cameroon oral literature. Funds for the workshop were granted by the International Development Centre in Canada on the basis of our on going project. Thanks to this link an agreement was signed between Guelph and Yaoundé on developing distance education at the University of Yaoundé. From this other advantages accrue:

- Information and advice on appropriate technology can be got with the assistance of Guelph University, as well as information on costs.
- Cooperation in the development and packaging of distance learning materials as can be seen in the distance education course above.
- Relatively low cost of production for the pilot course.
- Readiness on the part of the educational authorities to change due partly to the pressures in the university as described above.
- Mutual goals: possibility of developing and exchanging bilingual teaching/ packages.

Impeding factors

. Costs, if the government has to foot all the bills.

. One might anticipate resistance to change from some members of staff, but until now there is no reason to think that such resistance exists.

Canada:
Notes on Canadian Higher Level Distance Education

W A S Smith and M Croft
Laurentian University
Canada

TABLE OF CONTENTS

1.0 HIGHER LEVEL DISTANCE EDUCATION IN CANADA: DEVELOPMENT AND CURRENT TRENDS
- 1.1 The context
- 1.2 Brief history
- 1.3 The current picture
  - 1.3.1 Academic level
  - 1.3.2 Subject matter
  - 1.3.3 Costs
  - 1.3.4 Technology/media use
    - 1.3.4.1 Print and audio cassettes
    - 1.3.4.2 Teleconferencing
    - 1.3.4.3 Television and video cassettes
    - 1.3.4.4 Radio
    - 1.3.4.5 Video disc
    - 1.3.4.6 Computers
    - 1.3.4.7 Teletext videotext Telidon
  - 1.3.5 Governance patterns
    - 1.3.5.1 La Télé-Université of the Universite du Quebec
    - 1.3.5.2 Athabasca University
    - 1.3.5.3 The Open Learning Institute (OLI)
    - 1.3.5.4 The Knowledge Network of the West (KNOW)
    - 1.3.5.5 The Open University Consortium (B.C.)
  - 1.3.6 Registrations
- 1.4 Summary assessment

2.0 ILLUSTRATIONS OF COOPERATION IN DISTANCE/OPEN EDUCATION
- 2.1 Regional cooperation
- 2.2 International cooperation

3.0 RECOMMENDATIONS FOR THE DEVELOPMENT OF PROGRAMMES FOR COOPERATION
- 3.1 Criteria for evaluation of proposals for cooperation
- 3.2 Recent Canadian developments that suggest models for cooperation and lead to limited optimism about the future
  - 3.2.1 House of Commons TV channel/francophone community connection
  - 3.3.2 British Columbia developments
  - 3.2.3 Athabasca University Distance Education Research Institute
  - 3.2.4 The Northern Ontario Distance Education Network
  - 3.2.5 Health service initiatives
  - 3.2.6 CADE initiatives
  - 3.2.7 Ontario initiatives

4.0 SUMMARY STATEMENT OF PRACTITIONERS' ATTITUDES TOWARD COOPERATION NOW AND IN THE FUTURE

1.0 HIGHER LEVEL DISTANCE EDUCATION IN CANADA: DEVELOPMENT AND CURRENT TRENDS*

1.1 The context

The main challenge facing Canadian postsecondary education communities is that of easing education disadvantages caused by the size of the country and the isolation of hundreds of small human settlements. There is an urgency to open access to postsecondary education to people in the hinterland.

Also high on any list of challenges is the bilingual nature of the Canadian population. Even though the vast majority of francophones live within the borders of the province of Quebec, over one million more are scattered throughout the rest of the country. Furthermore, a majority of these live more in the "fringe" areas than in urban centres. Finally, the overall participation rate of francophones at the postsecondary level is substantially lower than that of anglophones.

Another significant dimension of the Candian context is its native people, who are both under educated and demographically scattered on "reserves" spread across the country. The Innuit population, scattered throughout the high arctic, creates a special challenge. Natives are consistently found at the very low end of the socio economic scale wherever they are located in the country.

Postsecondary education in Canada falls under 10 separate provincial jurisdictions which are very jealously guarded. These 10 become one in their common opposition to any intrusion by the Federal Government in the field of education despite the fact that the latter has full jurisdiction over the Yukon and North West Territories, as well as the fact that much of the money spent by the provinces comes from the federal treasury through transfer payments. This, needless to say, tends to impede progress at times.

Another reality of the Canadian situation is "institutional autonomy". This has had the unfortunate negative consequence of encouraging duplication of effort rather than the potentially positive one of uncontrolled cooperation. However, recent economic circumstances have severely challenged the traditional way of thinking of the various institutions, and there is growing evidence of inter institutional, inter provincial, and even international cooperation.

Along with the rest of the world, Canadians have been affected by the phenomenon of rapid change. Lifelong learning has become a necessity recognized by federal and provincial governments and institutions. Professionals in various fields require periodical upgrading which often
can only be provided adequately through distance education. This movement to distance education to address the problem is definitely a trend in Canada and all indications are that it will increase in the future.

People's lifestyles have also changed dramatically in the last several years. They demand a greater flexibility on the part of postsecondary institutions which are the providers of knowledge. Some people simply cannot fit into their lifestyles regular attendance at an institution. Their commitments to professional and home lives leave them no choice but to

*The information in this section is taken from a report prepared by Marian Croft, Director, Centre for Continuing Education, Laurentian University, Sudbury, Ontario. The writer is grateful to her for permission to use the data in this report.

pursue their studies through distance education. Moreover, many, given a choice, select the distance mode to pursue their educational goals.

But perhaps the greatest challenge in Canada is the provision of educational services to a small population of 27 million dispersed over a vast land of 3,851,809 square miles (9,976,186 square km.).

1.2 Brief history

In Canada, distance education at the university level started before the turn of the century, at Queen's University in Kingston, Ontario, with a programme of correspondence courses, which, in conjunction with its summer school, permitted adult students (mainly teachers) to earn a degree. This model was subsequently adopted by many other Canadian universities such as the University of Toronto, the University of Saskatchewan and the University of Ottawa. The latter, because of its bilingual nature provided some programmes to the francophone population of the country.

The need to provide uniform standards of education across provincial borders by professional organizations led also to the development of print based distance education programmes. University involvement in these programmes was at first concentrated at Queen's and the University of Toronto. Within many professional groups and in particular in the various organizations of accountants, print based course training became a requirement even for university graduates preparing for professional examinations.

The late 1960's and early 1970's saw the birth of a large number of distance education facilities including the Télé-Université de Quebec, The Open Learning Institute of British Columbia (OLI) and Athabasca University in Alberta. In addition, during that same period a variety of provincial communications authorities were created and given access and control over broadcast television networks. In the western part of the country ACCESS- Alberta was created and later in the '70's the Knowledge Network of the West (in British Columbia) (KNOW). In Ontario, the Ontario Educational Communications Authority, better known as TVOntario, was born. In Quebec, the major francophone area of the country (with more than 80% of Canada's francophone population) Radio-Quebec was launched with an educational mandate.

More recently, in March 1984, the Ministers of Education of British Columbia, Alberta, Saskatchewan, Manitoba, the Northwest Territories, the Yukon and the Federal Ministers of Inter Governmental Affairs signed a letter of agreement to create a Distance Education Committee to consider collaborative development and acquisition of distance education materials.

In September of 1984 the British Columbia government created the Open University Consortium which included the three provincial universities, the Knowledge Network of the West and the Open Learning Institute. The Open University Consortium of B.C. makes it possible for students to combine classroom based and home study courses from all member institutions in order to obtain a recognized university degree through the Open Learning Institute.

In the east, the Atlantic Provinces Commission on Higher Education created the new position of Director of the Office of Educational Communications. Work is still going on in that area to put in place an operational network to bring together the various postsecondary institutions in a joint effort to make programmes available to the population at large.

Although the community college system has been slower to move into distance delivery, several large and innovative programmes exist. North Island College on Vancouver Island,

Seneca College in Toronto and Confederation College in Thunder Bay have developed specialized programmes based largely on their geographic location.

At this time, over 40 Canadian universities and colleges offer distance education programmes, varying from selected courses to full diplomas, certificates and degrees.

1.3 The current picture

1.3.1 *Academic level*

Even though the vast majority of distance courses and programmes which are currently offered by Canadian universities are at the baccalaureate (or first degree) level, some are offered at the master's Level. There are also postgraduate short courses in such specialized field as pediatrics or engineering which are now being offered on an international basis by Canadian institutions (University of Ottawa - Jamaica) (Hydro-Quebec-Columbia).

The colleges of applied arts and technology offer both courses of general interest and courses leading to a certificate or diploma in specialized programmes such as applied health sciences, gerontology and business.

1.3.2 *Subject matter*

The majority of courses offered by Canadian institutions in the distance mode are in the social sciences and humanities. However, there are a few science courses offered by institutions, e.g. the University of Waterloo.

The main difficulty yet to be overcome in teaching hard science courses at a distance is the section of the course related to laboratory work. Computer technology has made possible the creation of "dry lab conditions", but this has not replaced the hands on dimension of a science course which is considered essential by most faculty.

A concentrated, on site (campus summer session of laboratory work is seen by some as a satisfactory solution to the problem, but many science faculty believe that the laboratory session must immediately follow the theoretical exposition of the material).

Home "kits" have managed to provide inroads into satisfying some of these pedagogical concerns but difficulties still exist and consensus is far from being achieved.

Colleges have offered a number of technical courses at a distance with good success, e.g. Confederation College.

1.3.3 *Costs*

In distance education the range of projects and their related costs can go from fully equipping a broadcast television station with a transmitter (EST Canadian 1.5 million dollars) to producing a print based course which can cost approximately $5,000 Can.).

The following are cost samples/examples in Canada:

- Salary costs for the T.V. station could run as high as $250,000 a year includ ing a chief engineer. In addition, add space rental, maintenance, insurance, upkeep, etc., to these figures.

- In Canada today a satellite dish to receive existing signals costs between $3,000 and $5,000.

- A teleconferencing bridge costs approximately $60,000 depending on the options. This "bridge" allows up to 20 centres to be linked concurrently or to have four courses, each offered in five centres concurrently.

- Convenors (for teleconferencing sites) cost approximately $1,500 per site (four microphones).

- An electronic blackboard which allows direct transmission of material from the host site to the participating site costs approximately $20,000, while on site monitors cost approximately $800 per site.

- Telephone line costs are directly related to distance, length of time used and hours of day used (different rates often apply to different parts of the 24 hour day).

- Video playback units with monitors can be obtained for $500 to $1000.

- Micro computers are now available on the Canadian market for as low as $1,000 for small basic units to as high as $8,000 - $10,000 for more sophisticated machinery. A $2,500 to $5,000 range provides a user with a fair choice of models with various capacities.

- The production of a television based course will cost anywhere from $25,000 to $250,000 with an average institutional cost of around $100,000 to $150,000. Some sophisticated productions made by some major institutions have exceeded $1,000,000. This translates into costs of between $20,000 to in excess of $100,000 per hour of programming, depending on the level of sophistication.

1.3.4 *Technology/media use*

Most currently used technologies are not threatening, require little or no training for use and are often not even acknowledged to be technologies. These low technology, high usability media include print, audio and video cassettes, radio, television and telephone. The more sophisticated technologies involving video discs and computers are still very much in an experimental mode in Canada and, while computers are gaining in acceptance, they are generally seen to be unfamiliar and difficult to use.

Following is a brief description of technologies currently in use in Canadian institutions.

1.3.4.1 Print and audio cassettes

Some of the inherent characteristics which have maintained printed materials as the most widely used resources in distance education in Canada are their virtually universal accessibility; the general availability and ease of use by students; and a less obvious but important practical advantage which is found in few of the other permanent media: additions, revisions and updates can be readily distributed to students and integrated with existing material while it is used. The advent of word processing, computerized design, typesetting, desktop publishing and sophisticated high speed duplicators and ink jet and laster printers has greatly improved the potential for efficiency in the

editorial and production processes which range from extreme simplicity to massive complexity in response to widely varying requirements in course design.

Audio cassettes have some of the advantages of print media since recording/playback equipment is universally available. They are widely used in Canada both for essentially "one way" and "interactive" communication, and provide an important advantage over most other media in that they are compatible with the automotive and "walkman" lifestyles. Various techniques for voice compression to enable accelerated playback have been developed, and are now available in inexpensive portable equipment suited for home use. The University of Waterloo is Canada's largest user of audio cassettes.

1.3.4.2 Teleconferencing

Specialized equipment is a major consideration in successfully linking groups or individuals in separate locations via telephone circuits so that all can participate in common class meetings or tutorial discussions. Private firms as well as telephone companies offer a wide range of equipment and services, at costs which compare in some cases favourably with alternatives involving extensive travel time for students and instructors. The social dynamics of groups involved in this mode of distance education is a complex study in itself. The University of Ottawa has developed expertise in this area and has teleconferenced programmes in French across the country.

1.3.4.3 Television and video cassettes

This is the technology most commonly associated with distance education, perhaps because of the influential example of the British Open University, which both legitimized and provided a model for the use of a combination of these media and others in higher education. In terms of overall cost effectiveness, it may be difficult to determine whether the educatinal value of television programmes is always worth the additional costs. Wilfrid Laurier University and Huntington College, Laurentian University, produce their own television material, and then must pay for access to private distribution systems. The University of Victoria also produces telecourses for distribution on the Knowledge Network of the West.

Because of the vast expanse of Canada, it is both impractical and expensive to distribute television signals via cable television, which by definition, will never reach the myriads of small communities scattered throughout the country, especially in the North which comprises 80% of the land mass. However, mainly through the initiative of local residents, small communities have developed home spun cable systems and are linked to the outside world via satellites from which they draw signals through medium priced parabolic "dishes".

Despite its geography, Canada enjoys one of the highest levels of homes linked by cable in the industrialized world. Satellites do offer the technical possibility of reaching upwards of 80% of the population through a vast network of cable companies, ranging from the very large metropolitan distributors to the minute systems operating more or less on the margin of the law in small remote hamlets.

1.3.4.4 Radio

Next to print, broadcast radio is the most generally accessible technology in Canada. It has been used in education for decades at all levels from provision of basic pre literacy education to university credit courses.

However, radio is not heavily used in Canada, partially because in metropolitan areas there are so many signals within small areas, while in rural areas only the CBC covers the country. In the past "Farm Forum" provided informal educational opportunities for farmers to discuss specific areas of interest. Currently, Open college Ryerson offers programmes by radio and Athabasca University uses radio in cooperation with ACCESS-Alberta.

1.3.4.5 Video disc

As in many other innovative technologies, widespread commercial distribution and hence general availability of reliable, low cost reproduction equipment has been delayed by lack of a standardized format for full size video discs, although its audio conterpart, the compact disc, has quickly overcome these difficulties and is now reasonably well established as an attractive alternative to audio cassette tapes and conventional records. Educational applications of the video disc have so far exploited its ease of indexing and quick retrieval of selected content through rapid controlled movement of the laser "pick up", rather than its impressive potential for permanent information storage and economical mass production.

1.3.4.6 Computers

While the development of programmes for educational purposes remains relatively costly, authoring software now exists to facilitate the process of computer/student interaction which is seen to be essentially an individualized diagnostic remedial process. The proliferation and gradual standardization of home computers creates wider opportunities for distance educational applications. Computer users in Canada already have access via telephone lines to a wide range of data banks, information services and electronic "mail", "bulletin boards", etc., and such services can readily be developed or adapted to educational uses. Several software manufacturers are seeking educational partners for the development of courseware, but there remains much room for progress in this area in Canada.

1.3.4.7 Teletext videotext Telidon

Various systems have been developed to use telephone transmission lines or small bands of radio frequencies to transmit text (and in some cases simple colour graphics) using computers for preparing, storing, coding and decoding text pages or lines of text and displaying them on video monitors or printers. Some of these can be multiplexed, i.e. transmitted simultaneously with other information on a single transmission. Thus they are usually employed in combination with other systems in such applications as teleconferencing and computer assisted learning. Variations have been proposed for a variety of information retrieval and marketing functions in conjunction with home telephones and broadcast or cable T.V., and if these are widely adopted, educa-

tional applications will doubtless follow. Only experimental applications to education have developed thus far in the Canadian postsecondary sector. The Telidon experiment, supported by the Federal Government, appears to have been a failure, as no economical applications could be found. Recently "Grassroots", the Agricultural Telidon Network, was shut down.

1.3.5 *Governance patterns*

The prevalent pattern in Canada is that of the "dual mode" institution, that is a regular campus based university with a distance education component. In these universities or colleges, the distance education programme is usually housed within the Continuing Education Centre.

There are, however, some notable exceptions such as:

1.3.5.1 La Télé-Université of the Universite du Quebec

Tele-Universite of the Universite du Quebec is the "distance education" component of the Universite du Quebec's multi campus system. However, note that it has had some difficulty establishing itself as an "equal" amongst the other components within its own university.

1.3.5.2 Athabasca University

Athabasca University was established in 1970 as an undergraduate degree granting institution to remove barriers that traditionally restricted access to and success in university level studies. Another aspect of its educational mission was to increase equality of educational opportunities for all adult Canadians, regardless of their geographic locations.

Athabasca University was explicitly established as an institution which has no on campus students. The home based learning opportunities provided for individual study are supplemented by a variety of group interaction techniques including teleconferencing to include dispersed learners. Athabasca is Canada's only "open university".

1.3.5.3 The Open Learning Institute (OLI)

Established by the British Columbia government in 1978 to offer a first degree as well as career, technical and vocational studies, OLI only occasionally uses distance education methods solely. Courses and programmes are offered at various educational levels, utilizing various technologies with an emphasis on print.

1.3.5.4 The Knowledge Network of the West (KNOW)

Created in 1980, again in British Columbia, KNOW serves as an electronic classroom for the province. Its 98 hours a week of broadcast are received by over 250 communities through Canada's Anik C-3 satellite. Not only is its signal beamed in B.C. but it also reaches the Yukon, the Northwest Territories and Alberta. It is not a teaching institute but a carrier for the Open University Consortium of B.C.

1.3.5.5 The Open University Consortium (British Columbia)

While the Consortium does not itself grant degrees, it has expanded the range of degree options within the existing university system of B.C. by modifying the Open Learning Institute's university degree to include extended transfer credit allowance from other institutions.

In the recent past, legislation which would bring all three British Columbia institutions under one umbrella organization (to be called the British Columbia Open Learning Authority) was presented to the legislature but as of this writing is not yet law.

1.3.6 *Registrations*

No statistics are available which show the magnitude of distance education in Canada, either by itself or in comparison with in person teaching. However, some figures are available which may be useful:

- The University of Waterloo registers 16,000 distance education students yearly, in over 300 courses.
- Laurentian University registers over 1,000 students in each of three terms every year, in 50 plus courses compared to 1,500 to 2,000 students in person.
- Athabasca University registers 10,335 part time and 178 full time students, at a distance.
- Memorial University of Newfoundland registers 2,100 distance education students and 5,400 in person part time students.
- The Open Learning Institute registers 17,776 students of which 6,136 are in university programmes.
- Mount St.Vincent University in Halifax registers 296 students via distance education and 1,463 in person.

There are no current statistics available in Canada comparing the cost per student in distance delivery as opposed to on campus. Athabasca University has done most of the work on costing and in 1979-80 the estimated cost per course enrolment there was $1,073.

1.4 Summary assessment

All efforts made by Canadian postsecondary institutions to offer programmes by distance education, whatever combinations of media are employed, allow accessibility to an ever increasing number of Canadians wanting university and/or college education. Progress is being made, but much more remains to be done to meet the postsecondary educational needs of Canadians. The demographic distribution of the Canadian population is becoming considerably less an inhibiting factor because of advanced technology in the field of telecommunications. However, the current range of programmes available through distance education is still very limited and many needs are not currently being met.

2.0 ILLUSTRATIONS OF COOPERATION IN DISTANCE/OPEN EDUCATION

There is general agreement amongst people involved that there is a free flow of information with regard to all aspects of distance education in Canada. The willingness to share experiences on an informal basis is a feature of the Canadian scene.

Also formal organizations such as CADE (The Canadian Association for Distance Education) provide structured forums for the exchange of ideas, analysis of projects and general education about technologies used in distance education.

The Canadian Association of University Continuing Education has been for years a leader in providing opportunities to share ideas and experiences. In fact, this organization gave birth to the CADE and still produces the country's only inventory or university distance education programmes.

2.1 Regional cooperation

Regional organizations like The Ontario Council for University Continuing Education have not only acted as a forum for the exchange of ideas but have often taken active steps in promoting distance education. Many of its members are sitting on advisory committees to TVOntario as well as participating actively in the standing committee on distance education of the Council of Ontario Universities, created in 1983.

A western group, which combines the universities of British Columbia, Alberta, Saskatchewan and Manitoba, also plays a similar role. As well, the Atlantic Provinces Association for Continuing University/Education performs a similar task in the eastern part of the country.

For over ten years some Canadian universities have used course software developed by sister institutions as part of their own programme offerings:

- Laurentian University in Sudbury leased courses from the Télé- Université in Quebec, Athabasca University in Alberta and from Wilfrid Laurier University in Ontario.

- Courses developed by Laurentian University have been used by the Univer sity of Ottawa, Wilfrid Laurier, and Athabasca.

- Cambrian and Northern Colleges utilize distance education courses for the training of ambulance paraprofessionals developed by Confederation College.

There is much greater willingness amongst the administrators of distance education programmes of Canadian universities to exchange material than there is amongst faculties of universities to do so. The major problem to date has been a reluctance to accept someone else's course because the "slant" or emphasis does not correspond exactly with one's own. This type of academic chauvinism has been deemed to be the greatest single negative factor in the slow progress towards greater rationalization of academic resources.

Joint productions of courses with four or five universities working with a broadcasting institution like TVOntario seem very promising for the future in alleviating the "not made here" syndrome.

In the community colleges, some exchange of materials has occurred. Confederation College in Thunder Bay, Ontario, has produced over 40 individual distance education courses which it allows other colleges to use, at cost.

Further examples of cooperation across regions of the country can be seen in the University of Ottawa's offering of a course in a nursing programme for students registered at the Universite de Moncton in New Brunswick but who live in scattered communities of that province. It permitted those students to complete their degree in nursing. Another example would be the course in the use of computers offered by the University of Ottawa to students (mainly teachers) in both New Brunswick and Nova Scotia.

Again from the University of Ottawa, courses were offered to students registered at the Faculte St. Jean in Edmonton, Alberta but living in some 16 communities in that province.

The new network linking francophone institutions across the country will in all likelihood develop into a multilateral complex of cooperation of courses originating anywhere in the country. In short, it will give French Canadians access to the whole range of courses and programmes which will emanate from Canadian francophone and bilingual institutions.

2.2 International cooperation

Some recent examples of Canadian universities cooperating outside Canada include:

- The University of Ottawa Medical School Children's Hospital has established audio links, combined with slow scan visual capabilities, with the Bustamente Children's Hospital in Jamaica. This allows sharing of most recent discoveries and techniques of treating children as well as general communication between the pediatric staffs of both institutions.

- Jamaica in turn is part of the distance education network of the University of West Indies which links a number of countries such as Trinidad and Tobago.

- Through the facilitating endeavours of CANAL the engineers of Hydro- Quebec will be offering upgrading technical courses to the engineers of the Hydro Authority of Colombia, South America. This will be accomplished via satellite with interactive video and audio links. In addition, the courses will be simultaneously translated from the Montreal end of the link.

- A third example of a slighly different type is the University of Ottawa's project to send the director of their distance education programme to Uganda to set up a pilot project of teleconferencing through a 20 site network.

- Experimental projects, again through the initiative of CANAL, have been conducted linking Montreal, Shanghai and Peking via satellites. The two 2 hour long audio and visual interactive links both proved to be very successful. Again, through CANAL an agreement was signed on October 22, 1986, in Miami between the Télé-Université du Quebec, Global Development Network and Miami Children's Hospital. These will be linked with Cost Rica, Argentina, parts of the U.S. and Canada. It concerns a project to develop a communications model of programming exchanges on organization and production of medical, agricultural (nutrition and food) and public administration.

- Laurentian University in Sudbury is currently exploring using the Master of Business Administration (MBA) material developed and used by Deakin University, Australia.

3.0 RECOMMENDATIONS FOR THE DEVELOPMENT OF PROGRAMMES FOR COOPERATION

While the recent track record with regard to cooperation in distance education around the world justifies a measure of optimism for the future, it is essential that proposals for cooperation be critically examined. It is suggested that those who would cooperate examine their proposals in the light of the following considerations.

3.1 Criteria for evaluation of proposals for cooperation

In his paper on Canadian ventures in developing consortia, Mugridge, following Neil, provides what he describes as "four major sets of reasons for collaboration". In fact, these are also criteria for evaluating efforts at cooperation. They are:

- economic and technical factors;
- education and pedagogical considerations;
- political and legal issues and
- social and cultural factors.

The criteria to be used as a measuring stick for assessing the success of collaboration within each of those four domains are:

1 does it make better or more extensive or new uses of resources than are available within one or more communities;

2 does it provide an opportunity to improve the quality of learning materials;

3 does it increase educational opportunities for a wider student population while retaining its relevance to student needs;

4 does it provide a useful response to political pressures of various kinds; and

5 does it relate effectively to a perceived need to guide or initiate changes of various kinds in particular societies.

Perhaps the most focused and operationally specific set of criteria by which to assess schemes for cooperation are those provided by Jevons, Northcott and Polhemus in their discussion paper prepared for the Southern Africa Distance Education Project. Disclaiming any attempt at comprehensiveness they note that any model or scheme of cooperation should be able to:

1 Effectively train sub professional staff and professional staff at levels up to degree level;

2 Effectively prepare and deliver shorter, non award courses;

3 Provide effective student support, including laboratories;

4 Overcome the sense of remoteness often felt by students studying at a distance;

5 Be academically credible in the region, and in appropriate subject areas world wide;

6 Demonstrate its relevance to the needs of the region and not depend excessively on materials imported from elsewhere (this criterion underscores the importance of any model of cooperation fostering a sense of ownership in the region or country in which it is located);

7 Actively foster cooperation between countries of the region and function as a vehicle for the interchange of ideas, learning materials, and personnel;

8 Control establishment expenses at a reasonable level in relation to the goals to be achieved, and of course be potentially appealing to donors;

9 Demonstrate that both course preparation and operating expenses are economical - economies of scale being of special importance;

10 Offer opportunities for staff development within the cooperating regions or countries and provide for selected staff to undertake development activities external to the region.

Smith and Snowden, in a report prepared for the Council of Ontario Universities focusing on the extension of educational opportunities through distance education mechanisms, assess five models of cooperation against three categories of criteria that they label:

1 The principles of effective learning;

2 Political criteria;

3 Financial/resource considerations.

Within the category of criteria described as "political" their analysis includes an effort to estimate the probable political impact at the individual institution, the region, and finally the provincial level.

The remaining criteria are self evident, although assessment according to principles of effective learning suffers from the absence of consensus among those expert in the field.

Although not restricted to distance education, a major work by Offerman evaluates the experience of three terminated consortia in higher education in the United States and extracts the following lessons:

1 Make sure that your purpose or "mission statement" is clearly stated and contains both short term and long term goals. A corollary to this lesson is the critical importance of ensuring that this statement and description of goals are communicated to all those participating in the cooperative effort.

2 Use the accepted statement of purpose to ensure that the institutional form the cooperative effort takes is consistent with that statement of purpose; use the statement of purpose further to assist in the definition of appropriate and necessary cooperative activities. In other words, keep checking what you are doing against the statement of your reason for being.

3 Again, invent and develop organizational structure against a background of your statement of purpose and the operationalizing of the goal statement. In this task, make provision for the major involvement of member institution administrators and faculty in significant roles.

4 In establishing a governance structure for the cooperative effort, ensure that it fits the statement of purpose and that the people selected to implement the governance structure understand, support, and are prepared to make it work. In the negative, this suggests that simply having a chief executive or senior officer of an institution as a member of a board of directors for some form of cooperation does not ensure the support of the people that will be required to make the scheme work.

5 Make certain at the outset that members to be brought together in the cooperative effort have a commitment to the arrangement and are sufficiently complementary to ensure that the scheme will work.

A good way to work toward this goal is by requiring each potential member to conduct a self study as a prerequisite for membership. Among other things the study should include anticipated benefits, contributions and cost of membership.

6 Require that each member of the cooperative effort contribute some resource to the endeavour - require membership fees or "club" dues.

7 Pursue the development of a supporting public policy that will provide funding as an incentive for voluntary cooperation.

3.2 Recent Canadian developments that suggest models for cooperation and lead to limited optimism about the future

3.2.1 *House of Commons TV channel/francophone community connection*

On October 20, 1986, the basis was laid for the creation of a loosely knit consortium composed of francophone and bilingual institutions from across the country to share human resources as well as course software. A new non profit corporation called CANAL with its base in Montreal at the Télé-Université has negotiated an agreement with the Canadian Broadcasting Corporation which will give it acces to 10 hours a week (1 1/2 hours per morning) on the pan Canadian House of Commons Television Channel. Through the use of this communication mode, any francophone or bilingual institution will have the opportunity to offer courses to the widely spread French speaking Canadian population, coast to coast. This is undoubtedly a significant development in meeting the needs of the Canadian francophone population.

3.2.2 *British Columbia developments*

The recent developments in British Columbia could offer the rest of the country a model for inter institutional collaboration and could eventually be linked via satellites or telephone lines with other provincial networks. (See section 1.3.5.)

3.2.3 *Athabasca University Distance Education Research Institute*

This recently created Institute should provide the rest of the country with a growing base of scientifically assessed educational experiments and practices, thereby facilitating the development of improved means of distance education.

3.2.4 *The Northern Ontario Distance Education Network*

This is in the process of being launched with a commitment by the government of that province to fund the project at the rate of five million dollars a year for four years. It

should have a significant impact on the very scattered population of that area of the country, and it should provide a unique test bed for new technologies.

3.2.5 *Health services initiatives*

The growing network of hospitals linked with University Teaching Hospitals in the south will provide an increasing set of possibilities for the upgrading of medical practitioners throughout the country. Experiments have been conducted with areas as far apart as British Columbia and the Telemedicine for Ontario Project with apparently satisfying results.

3.2.6 *CADE initiatives*

CADE's (Canadian Association for Distance Education) creation of a research and development committee for the training of practitioners should have a very positive effect on the attitudes of an increasing number of academics who, to date, have been reluctant to engage in distance education projects.

3.2.7 *Ontario initiatives*

In Ontario, five universities are jointly cooperating with TVOntario for the development of a telecourse on the Sociology of the Family. An Introduction to Sociology has already been produced. The success of these projects should lead to further progress of such inter institutional endeavours.

4.0 SUMMARY STATEMENT OF PRACTITIONERS' ATTITUDES TOWARD COOPERATION NOW AND IN THE FUTURE

The consensus that seems to emerge from those involved in cooperative endeavours in Canada is that wherever and whenever cooperation has taken place the level of satisfaction is fair to high. However, there is also a consensus that not enough is taking place and that many institutional barriers must be brought down.

"The time is now" mood seems to summarize best the attitude gleaned from across the country. There is a realistically positive attitude toward new cooperative initiatives which characterizes those involved in distance education, even though most expressed varying degrees of frustration at the slow rate of progress.

References

Croft, M. (1986)
Commonwealth Cooperation in Open Learning: Canada
Unpublished paper,
Centre for Continuing Education, Laurentian University, Sudbury, Ontario, November, 1986.

Jevons, F.R., Northcott, P.H. and Polhemus, J.H. (1987)
Southern Africa Distance Education Project Proposal. April.
Submitted by F.R. Jevons, P.H. Northcott and J.H. Polhemus of Deakin University, Victoria, Australia 3217 as consultants to the Southern Africa Development Coordination Conference, the Government of Swaziland and the Commonwealth Fund for Technical Cooperation.

Mugridge, I. (1983)
Consortia in distance education: Some Canadian ventures,
Open Campus, vol. 8, pp.22-29.

Neill, M. (ed). (1979)
Education of adults at a distance
London, Kogan Page Ltd.
p.168 (proceedings of 1979 British Open University conference, Birmingham, England).

Offerman, M.J. (1986)
The pitfalls of cooperation,
Administrator, The Management newsletter for higher education,
vol.5, no.7, April 14, 1986.

Smith, W.A.S. and Snowden B.L. (1983)
A review of distance education in Ontario universities,
Toronto, April, 1983, 134 pages.

Costa Rica:
Higher Distance Education in Costa Rica

O M Murillo Ugalde
Universidad Estatal a Distancia
Costa Rica

Higher distance education in Costa Rica

The interest of the Costa Rican population to improve the standard of living has been reflected in an emphasis and development of education in our country. Every day more people seek university education, and this forced the Costa Rican government to open gradually three state universities (Universidad de Costa Rica, Universidad Nacional, Instituto Tecnologico de Costa Rica). Nevertheless, because these universities are located at the centre of the country (San Jose, Heridia and Cartago, respectively), they were inaccessible to the population who lives in far away places and who do not have the necessary economic means to change residence and pay for support and studies there. Then, because Costa Rica seeks the democratization of education and because a group of professors of Universidad Nacional and the Minister of Public Education considered it necessary to change Costa Rican higher level education and have a university that offered opportunities and an orientation different from the traditional, a solution was sought in distance education.

After knowing the experience of the Open University in Great Britain and UNA in Venezuela, they studied the possibility of opening a distance education university in Costa Rica, and in 1977 they signed the law of foundation of the Universidad Estatal a Distancia (UNED).

Currently, even though UNED is the only distance education university between Mexico and Colombia, there exist programmes of distance education in Panama (CICAPED Program of training teachers), Honduras, Guatemala (Universidad Andivar), Salvador (Educative television), Nicaragua (Programme in Mathematics), Dominican Republic and Mexico (UNAM).

The information presented in this paper concerns the development in higher distance education in Costa Rica, in UNED specifically.

Financial resources

The funds to support UNED come basically from two different sources: the government and UNED's own income. The government gives 6% of the Fund for Higher Education, $1,350,000 from the Ministry of Public Education and the income from a stamp of education culture. The own income comes from what students pay and from the sale of services: books, audiovisual materials and programmes, programmes of extension, fees.

On the other hand, UNED also has international aid coming from OAS and BID for small projects, audiovisual and technological interchange.

National networks

There exists in our country only one network of radio and television with distance education (Radio Nacional and Channel 13) that gives UNED the opportunity to transmit its audiovisual programmes. The University of Costa Rica also has an educational radio and a television channel through which they transmit programmes for UNED. There are also six private television channels and many radio stations where UNED programmes could be transmitted.

Objectives

Basically, UNED seeks among its general objectives to:

- develop the culture;
- give an opportunity to students who do not have a chance to enter a traditional university;
- to go to places where face to face education cannot reach;
- foster democracy;
- educate professionals in different fields that the country needs.

UNED's specifc objectives are to:

- strengthen the values on which the Costa Rican State is founded;
- give higher level education, specially through the use of distance education techniques;
- admit preferably those sectors of the population that, because of remoteness, job or other reasons cannot attend other university centres;
- contribute to the scientific and technological research for the cultural, economic and social progress of the country;
- give the adequate instruments for the qualification and permanent formation of all inhabitants;
- serve as a mean of diffussion of the culture;
- contribute to the non university education of adults, establishing systems of cooperation and coordination with specialized national and international institutions;
- foster the scientific, artistic, cultural and civic spirit of the Costa Rican people.

Regional cooperation

Efforts towards regional cooperation have been limited. They have consisted of:

- Sale of services to the Universidad Andivar of Guatemala.
- Seminars.
- Newspaper (for Universidad Nacional, UNED and the Central American universities).
- Asociacion Iberoamericana de Educacion a Distancia, that exists to encourage regional cooperation.
- Visits of different Central American universities to UNED to observe what we are doing and to implement some of these ideas in their countries.
- Annual seminar in UNED with the help of OAS for the universities in Central America and South America. The objective is to interchange ideas and to explain aspects of didactic and audiovisual materials.

Factors which may have facilitated or impeded the achievement of objectives in distance education

Facilitated

- In the first place, there is a political factor. When UNED was created, there was disagreement about the way Universidad Nacional was organized.Then, there was motivation for UNED to be successful.
- Being such a small country (51,000 square kilometres) it is easy to communicate. Besides, the highways cover the country and the system of telecommunications is excellent.
- The financial support of the government has helped substantially.
- The integration of UNED with the other universities has permitted degrees to be recognized in all universities and free cross crediting of studies among the universities.

Impeded

- Reduction in funding does not allow for the proper development of research in distance education expansion and currently, UNED's funding is only 6% of that given in 1981.
- The public thinks that face to face education is better. Therefore, UNED is always the second option. It has not been possible to overcome this opinion because UNED has oriented its programmes to students of first admission or students of initial education and some to training, but very few to the postgraduate level (which is more prestigious).
- UNED does not have its own television and radio stations. So the programmes are transmitted with the limitations imposed by others.

Development and use of new technologies

The main means of instruction in UNED has been and continues to be the written material. For its production, there are eighteen academic staff and an editor in charge of the publication of the didactic units.

The tutorial help is mainly face to face. Althouth the telephone system in Costa Rica is excellent, students do not use this service very frequently.

On the other hand, as a support to the didactic unit, UNED produces audiovisual material which is available through the library, academic centres, Radio Universidad de Costa Rica, Channel 13.
In the academic centres, they have installed laboratories where the student may undertake experiments (practical work).

Only recently, and on a very small scale (because of lack of funds) UNED has started to experiment with the use of computer aided instruction. At present, there is a pilot with a programme of mathematics and we are preparing a course in microeconomics.

Recommendation for strengthening cooperation in higher level distance education in the region

- Establish a branch of AIESAD (Asociacion Iberoamericana de Educacion a Distancia) in Costa Rica or a new association to provide a permanent means of communication. Unesco could provide the funds for this.

- Creation of a centre of production of written and audiovisual material that could be used in Central America. UNED already has this programme in mind but is looking for funds ($1.5 million). The objective is to produce materials for the Central American and Costa Rican universities to avoid the duplication of materials.

- A television or radio station that transmits only educational programmes in Central America or networking among the TV stations each country already has.

- An agency that documents the needs of each country, what each country is doing and what has been done in one country that is transferable to another. This agency could create joint centres of information and documentation. Each country works on its material which is then lodged on the computer files of the other universities and is available to the staff and students of all the universities. The agency could also be in charge of the copyright and a programme of teleconferences.

Fiji:
Higher Education in the South Pacific through the University of the South Pacific

Marjorie Tuainekore Crocombe

University of the South Pacific
Fiji

Background

The University of the South Pacific (USP) serves the most diverse and scattered region of any university in the world. It belongs to the eleven Pacific nations of Cook Islands, Fiji, Kiribati, Nauru, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Western Samoa. All but two of these nations are comprised of many scattered islands. The region embraces 60 cultures and 235 languages in a total population of 1.5 million ranging across Melanesia, Micronesia and Polynesia. The region is about 6,500 kilometres from east to west and sea and air communication is limited.

The main Laucala Campus is located in Suva, Fiji. Through its three Schools of Pure and Applied Sciences, Social and Economic Development and Humanities, courses are offered at Certificate, Diploma and Degree levels to both internal and extension students from all eleven countries. The School of Agriculture is located in Western Samoa. It has not yet become engaged in distance teaching.

USP has a series of institutes, units and centres which specialise in Education, Pacific Studies, Marine and Natural Resources, Social and Administrative Studies, Agricultural Research, Extension and Training, Rural Development, Atoll Development, Pacific Languages and Legal Studies. These institutes, units and centres complement the teaching of the academic staff of the Schools of the University. This dual mode university allows academic staff to teach internal students and modify their courses for distance students.

Student enrolments

1,800 students are enrolled in the internal programme of the USP, another 2,000 study by extension. In-country continuing education programmes cater for another 5,000 and more per year. Thus nearly 10,000 students are involved in higher education programmes offered by USP annually. When one considers the dispersed nature of the region served by USP this is no mean achievement. An effective communications system is crucial for the distance education programme.

The Extension Services division is responsible for administering the two programmes for extension and continuing education which are complemented by the satellite delivery system used for teleconferencing, tutorials and management of the service to the region. The

Extension Services division administers the distance education programme of the USP through a network of extension centres located in ten of its eleven countries. The staff of a centre consists of two core academic staff, up to six other academic staff, two or three administrative and a number of part time tutors.

The Extension Services division now offers 130 courses at various levels through the distance education mode. There is continuing interest in studying by extension, the market seems insatiable but financial resources are limited.

Financing distance education at USP

The service which is available to students in the USP region has attracted aid from overseas sources for course development and the printing of courses. Another source of aid is used for bringing in specialists with skills in course development, evaluation and research from Australia, New Zealand and the United Kingdom. With the contraction of external funding experienced recently, USP's recurrent budget has had to provide for some of these financial requirements from internal funds.

A recent trend has also been developing in line with regional developments in such matters as environmental studies and marine resources studies. International funding has been received for courses to be developed in these by distance education. Interest has also arisen among donors who want to support continuing education courses relating to health and nutrition. Whereas these aid sources are appreciated, the USP authorities always worry about what happens after the courses have been developed and are running. These new programmes are mounted on the understanding that when funds run out the programmes are liable to be cut for lack of funding from the university's own recurrent budget.

Facilitating factors in achieving distance education objectives

- Support from all eleven governments for the concept of distance education which enables working students to remain in their country while studying. A cost effective system of higher education is attractive to the governments.

- Support from international sources for the idea of a regional institution serving many countries attract financial assistance for capital development, course development, staff development and training, scholarships for extension students, tutor travel to the regional centres, experimental use of satellite for teaching at a distance, etc.

- Existence of one language for communication (English) is a major factor in achieving the objectives of distance education.

- USP encourages the involvement of academic staff in distance teaching. The annual staff review exercise requires details of individual involvement of staff in distance teaching. This is a factor in evaluating staff performance for promotion. This helps get over the tendency to treat distance students as second in importance after on campus teaching.

- Increasing use of distance education material for internal teaching allows for the improvement of courses.

Impeding factors

- Because of the different levels of education in the eleven countries at the inception of USP it had to begin by offering pre degree and pre diploma level courses for some years to build up the number of students for higher education. This has continued and takes up time of staff in this preparatory work. Contributing countries themselves are being encouraged to undertake preliminary teaching in high schools but for USP to vet the standards.

- The military coup in Fiji on 14 May, 1987 may affect drastically the operation and the very idea of regionalism. Social, political and economic instability has affected the operations of USP in general and the distance education programme will probably be affected as staff from overseas move out of an insecure situation. Academic staff involved in distance teaching are usually hard to replace. Moreover, there has been a drop in extension enrolments throughout the region since the coup, an indication of reduced confidence.

- Three of the key staff from the course development area of Extension Services have left in the past week (September 1987) because of the military coup. These are difficult people to replace quickly. Some of the new courses planned may be shelved as a result.

The evacuation of all students from the campus back to their home countries after the 14 May 1987 coup starkly illustrates how fragile regionalism can be in the USP context. Other governments immediately began to seek other places to send their students as a contingency plan. Aid donor countries were not keen to accept them. More and more dependence on the distance education mode could well be the way the USP will have to operate in the future to save it as a regional organization. The coup also encouraged the contributing countries to start planning for their own national institutions even though their size is not conducive to establishing comprehensive national institutions.

Development and use of technologies in distance education

Communicating between the eleven countries has been a major problem from the inception of USP. Experiments with the use of satellite communication for distance teaching began in 1972 and ceased in 1985 at the demise of NASA's ATS1 satellite. The experiments demonstrated that, provided the system is affordable, satellites are useful for teaching at a distance, particularly for developing countries. A satellite is not distance dependent in terms of both cost and effectiveness. It is ideal for the communication problems that are experienced by small, scattered islands set in a vast ocean such as the USP region. But recognizing that NASA's free satellite was a once off offer, USP began to canvas from the early 1980s for affordable replacement technology. We worked in cooperation mainly with the eleven regional departments of telecommunications and education.

A study of three likely satellite systems (AUSSAT, INTELSAT and PACSTAR) gave USP the option to choose INTELSAT 5 which serves the telecommunications needs of the Pacific Islands. National carriers agreed, together with INTELSAT, on an affordable price for a 24 hour transmission service that presently links seven of our eleven countries on a point to multi point service. A one year free access to the space segment through INTELSAT's Project Share allowed USP to trial the service. INTELSAT has extended this free access to the space segment till September 1988. Although the service has provided excellent direct audio transmission there have been some technical problems relating to associated telephone line service in the various countries. These are being improved.

The day schedules fully utilize the service for administration of the distance education and continuing education programmes as well as some of the general business of the university, teleconferences for extension students, research, publishing and consultancy activities of staff in the region.

The evening hours will be utilized for automatic data transmission through the use of computers, once the software problems are sorted out.

Print

Print makes up the major portion of the distance education course materials. The closure of the university printery, because it was uneconomic, allowed a choice to be made to a variety of commercial print shops in Suva. All the print materials needed are distributed by air freight from Suva.

Audio and video cassettes

Audio cassettes are cheap and easy to prepare. They are sent to students with the print materials. Video cassettes are used to introduce the tutor of a course and allow him to explain the contents of his course. They are also useful for the students who can then visualize the staff member when he speaks on the satellite tutorials later.

Radio

Radio is used for the general dissemination of information to extension students and when time permits, other items of interest are included.

Computers

USP's computerizing programme got underway two years ago. It has been of great benefit for course development for distance education. Student records are computerized and the computerization of all general administration for all Extension Services work will be undertaken soon. Computers are also installed in all the extension centres for the above work as well as for transmission of data by electronic mail and for the course on computing just introduced this semester. This will be a major development for fast data transmission to overcome the disasters which happen some of the time as airliners do not always leave for their destinations on time.

Facsimile

It is intended that the larger centres will be provided with facsimile machines. Staff living and working in another country beyond Fiji e.g. Vanuatu, will use the facsimile machine to transmit to Extension Services course manuscripts being developed there.

Regional cooperation

- Being a regional institution from its inception, USP has had plenty of experience with multinational distance education, and is aware of its advantages and disadvantages.

- Regional cooperation with telecommunications has been successfully negotiated with concessionary charges and appropriate arrangements.

- The Australian South Pacific External Studies Association (ASPESA): USP Extension Services has taken advantage of the workshops and seminars offered. ASPESA provides a useful access for staff development and to keep up to date with developments in distance education. It is an Australian dominated institution, however. This has spurred some of us to look at the possibility of setting up a Pacific Islands association. The time factor and the fact that there are few who would want to take on another involvement with this aspect of distance education extra to an already full programme of work has hindered progress. We can also take part in the Distance Education Association of New Zealand (DEANZ).

International cooperation

USP has membership with the International Council of Distance Education (ICDE).

Some of us also serve as consulting editors for internatioanl journals such as the recent one set up by Simon Fraser University. Staff are encouraged to do research and publish in international journals apart from in house publications by the USP Schools and Departments.

We have linking and working arrangements with international universities such as the UK Open University, the Japanese University of Electro Communication and professional telecommunications organisations in the USA. I am a member of the Commonwealth Expert Group on Distance Education.

It is a personal belief that satellite links and internationalism is about to bring USP to the threshold of a new era in university education. There are immediate regulatory telecommunications problems to overcome but it is assumed that when these are taken slowly, one by one, they can be overcome.

France:
Centre National D'Enseignement à Distance

Andrée Bastard

Centre National D'Enseignement à Distance
France

In France, higher level distance education is provided by private organizations and by public institutions.

Private institutions, which are quite numerous (there are 200), have been the precursors since the end of the nineteenth century.

The public institution with the largest number of students (240,000, with 65,000 in the higher levels) is the Centre National D'Enseignement à Distance, (CNED). It specializes in correspondence teaching and is directed at different categories of audiences: from the primary level through secondary courses in literary, linguistic, scientific and technical areas, to the preparation for competitive examinations for admission to posts of secondary and tertiary teaching (agrégation).

Other public institutions provide distance education alongside face to face education (dual mode institutions). These include the universities, the conservatoire national des arts et métiers (technical and scientific subjects for higher level technicians and engineers) and some of the ministries, such as the Treasury.

Recent developments in distance education at the CNED

Audience

Numbers have increased steadily in the last few years. In five years they grew from 186,500 to 230,000.

The increase of the demand is possibly the result of a socio economic situation which requires higher levels of qualifications.

Another observation is the growing emphasis placed on the vocational aspects in the demand for distance courses. Indeed, the majority of the correspondents' aims are access to a trade or promotion in their present position, rather than general culture or improvement of knowledge.

Enrolments at the CNED are increasingly often taken within the framework of continuing education organized by companies for their personnel. This is particularly important for

small or medium sized companies, as, for them, the organization of specific courses is rendered difficult by the small number of employees (hence higher costs and the necessity for expensive travel).

Pedagogic aspects

The use of modern communication techniques has spread considerably in the last few years, the written text remaining, however, at the core of distance education. Nevertheless, records and, even more so, audio oral cassettes have been added to it, particularly in the teaching of languages.

Video cassettes are used as complements to the written course, particularly for technical and scientific subjects which require experiment and practical work.

Some multi media courses have been developed, particularly in scientific and medical areas. For example, a course in biotechnology is offered at the level of the third year of university. It combines audio video graphics (graphic and geometric images plus sound messages and texts in interactive programmes), telematique [1], video cassettes, telephone and written texts.

Telematique is used to inform the public about the courses offered (catalogue). Practical information and the contents of various courses and pedagogic data bases are offered. Telematique also provides bibliographies and language tests.

Relations between students and teachers

In order to remedy the lack of contact between students and teachers in distance education, measures have been taken to organize reunions (fifteen correspondence students, at the most, to a teacher). Thus, in some subjects, in particular those requiring practical work and experiments (electronic, computing, etc.) periodical reunions take place in an institution with the necessary equipment, as close as possible to the correspondence student's home.

The duration of these reunions (workshops) varies: 40 hours in five consecutive days, for example, or 60 hours i.e. five meetings over two days on each occasion. These reunions allow for a more personal follow up of the student and they often avoid premature withdrawals. Moreover, the development of the electronic mail will bring distance education closer to its students. It will take the form of a tutorial, a live or pre recorded dialogue between teachers and correspondents. Teleconferencing, on the other hand, will gather the students around a teacher animateur for a telematique discussion in real time.

Funding

The percentage of government grants in the CNED's budget has decreased in the last few years. It is now 47.5%.

Moreover, the number of positions granted to the Centre by the Minister of Education is also decreasing. Hence it has been necessary to increase the institution's own resources by increasing enrolment fees (which remain quite low) and by seeking new activities, particularly in the area of vocational training.

[1] Translator's Note: the term "telematique" has been kept in the English text, and refers to the whole range of electronic data processing and telecommunications equipment used by the Centre.

International activities

In order to develop links and exchanges between the CNED and distance education specialists from other countries, meetings have been organized recently (conferences, seminars, training activities...):

- An international conference on distance education and continuing vocational training took place in January 1987 under the sponsorship of the French commission for Unesco: experts from ten countries participated (GFR, UK, Spain, Netherlands, GDR, Algeria, Tunisia, Zaire, Comoro Islands, Quebec). The talks centred on the regulatory and institutional legislative aspects of distance education, the use of new media and the practical aspects of the courses.

- A seminar on audiences, contents and media in distance education was the subject of ten sessions during the 1986-1987 university year, during which many foreign specialists took part: the questions of the specificity and complementarity of media and the educative role of television were discussed.

- The CNED also replied to the invitation to tender for the European Economic Community's COMETT's Programme concerning the setting up of a multi media distance course for the training of personnel of small and medium sized companies. A training programme in biotechnologies from the CNED Centre in Rennes has been accepted.

- Finally, training workshops for the utilization of distance education techniques and for the designing of a French teaching programme have been organized, in particular for ten educators from Argentina who wish to set up a distance training course for French teachers in their country.

Factors facilitating or impeding the realization of the objectives in higher level distance education

There are two main objectives:

- To meet the individual needs of students who are unable to attend institutions owing to health problems, handicaps, long distances or other activities (sportspeople, housewives...);

- To adapt to the requirements of organizations such as administrations and companies in the area of the continuing education of their personnel.

Facilitating factors	*Impeding factors*
. ability to identify new needs homework and corrections	. excessive delays in the delivery of courses,
. rapidity of response to the demand	
. economic circumstances (increased needs for training)	. administrative overload (enrolments, accreditations...)

. training efficiency: good results at examinations	
. government decisions favourable to distance education: help with funding and staffing training needs	. inability to adapt to the demand, lack of flexibility, delays in the analysis and response to new
. good organization of the institution: computerization of the administration, technical modernization (printing)	
. profitability of courses (sufficient number of enrolments)	. lack of contact with other organizations face to face or at a distance
. to know how to communicate and to publicize the courses (advertizement, information services, publications, posters...)	
. moderate enrolment fees fees	. excessive increase of enrolment
. modernization of teaching tools (audio visual, telematique, audio oral)	. unattractive teaching methods
. presentation of a more positive image of distance education	. presentation of a negative image of distance education
. possibility of contact between students and teacher (reunions, teleconferences etc.)	. lack of contact between students and teachers
	. lack of attendance, withdrawals (difficult conditions of distance learning)

Use of new technologies

Audio cassettes

For language teaching the cassette has replaced radio programmes owing to its greater flexibility. Moreover, it allows interaction as the student can record oral communication exercises which will be corrected by the teacher. Costs are relatively low.

Video cassettes

Video cassettes are equally flexible in their use, but are more expensive than audio cassettes (costs of production and student's equipment). Video cassettes are used as support

material for language courses and for subjects requiring experimentation and practical work.

Telematique

Language tests are offered, using "minitel". They direct the students more easily to the most appropriate level. Bibliographic data bases are available in some subjects. At the moment the costs of such communications remain high.

Multi media courses

In addition to the written notes, which accompany returned corrected homework, a telematique service is provided (bibliography and complementary explanations), the video cassettes and didactic computers which employ interactive audio video graphics techniques.

Audio video graphics associate graphic geometrical images, sound messages and texts in interactive programmes.

At present, multi media courses in biotechnologies, in hemato immunology, are offered at the higher level to engineers and technicians, within the framework of continuing education and soon will be extended to other areas. In the future such courses should be developed within the framework of European programmes.

Computers

For the administration of distance education, they allow a faster processing of enrolments and of the follow up of studies, hence shortening the delays in the replies to the students, which are often thought to be discouraging in distance education.

Recommendations for the development of cooperation

- to define clearly the objectives of cooperation;
- to set up the necessary budget for the organization of conferences and seminars;
- in agreement with the Foreign Affairs Ministry, to establish programmes of cooperation and exchange with applicant countries (i.e. Argentina, Algeria, Togo, the Comoro Islands) exchange of personnel: workshops, missions;
- to obtain the necessary tools for the communication of activities undertaken by the institution: a newsletter has been in existence since January 1987: "Apprendre" ("To Learn"), the CNED's magazine, (to be distributed to organizations of other countries).

Networks

- to join existing networks: ICDE;
- to keep close links with Unesco which could be the "network of networks" and coordinate exchanges in the area of distance education;

- as a follow up to the francophone conference organized in September 1987, to participate in the creation of a higher level distance education network gathering French speaking countries throughout the world.

CENTRE NATIONAL D'ENSEIGNEMENT A DISTANCE

209-211 rue de Bercy
75012 - PARIS

There are seven education centres: at Grenoble, Lille, Lyon, Rennes, Rouen, Toulouse and Vanves, their activities are coordinated by a central service situated in Paris.

Courses offered at the higher level

Technical education: preparation to higher level technician certificates. Competitive examinations for the recruiting of professors.

Humanities, Arts: preparation to university degrees in general studies.

Languages: Eastern and Asian languages.
Competitive examinations for the recruiting of professors.

Higher level accountancy studies

Scientific courses: biotechnologies, hemato immunology, dietetics.
CAPES and competitive examinations for the recruiting of mathematics and science teachers.

Administration: competitive examinations for the recruiting of public servants, category A (Bachelor level).
(In the state and territories).

GDR:
Initial and Further Education in the GDR Organized as Higher Level Distance Education

H Möhle

Karl Marx University
GDR

Importance of the International consultation

It is of great international interest that the Unesco Secretariat, together with Deakin University in Geelong, Australia, carries out the international consultation on the subject of higher level distance education. It is planned for the realization of the approved 23 C/5, programme V.5.1.

Following the agenda for the consultation, I would like to report on higher level distance education in the GDR. I consider the following aspects:

- the present development of university distance education;
- factors which have either facilitated or impeded the achievement of the objectives of distance education;
- the use of new information and communication technologies in distance education;
- the improvement of regional cooperation in distance education.

Once more it is proved that international exchange of experience is the best and cheapest investment. It is our aim to apply the extensive experience in the field of university distance education gathered in 35 years of international discussion in the GDR. The future oriented experiences of other countries, particularly those of the host country - of the internationally acclaimed Deakin University - should be used creatively for the development of distance higher education in the GDR which is at present at innovative stage. I know from my first visit to Australia, in 1975, that there are many similarities between university distance education in Australia and the GDR. This favours the transference of such knowledge.

The present development of university distance education

The educational demands of the citizens are derived from the social development of the GDR, from its scientific and technological progress and from its economic strategy. These demands determine the initial and further education of its university and technical college students both undergraduates and graduates.

The introduction of distance education took place more than 35 years ago, in close association with full time on campus education as part of the process of anti fascist and democratic development and the foundation of the fundamentals of socialism in the GDR.

The basic concept of higher level distance education which was created 35 years ago has fully proved its worth. Nevertheless, its further shaping in content and didactics is necessary and is continuing.

Approximately a quarter of the 1.7 million university and technical college graduates in the GDR (20.5% of all working people), have attained their qualifications by means of distance education. At present, distance courses in 130 subjects are offered by 20 out of the 53 universities and colleges of higher education up to degree level (1, p.223). Between 1981 and 1986, nearly 200,000 graduates of universities and technical colleges were further educated, mostly in the form of distance education (2, p.277). Initial and further education in the form of full time and distance education have become decisive factors of social growth as science increasingly pervades all areas of society. On this basis the necessary educational preconditions for the 90s and the turn of the century are ensured.

Nearly all basic study fields ("Grundstudienrichtungen") have been made available for study by distance eduction. Exceptions are medicine and theology. Since the beginning of the 70s there has been a concentration on those basic fields of study where graduates are important for improved performance of the national economy. Education in technical, agricultural and economic sciences, therefore, has been central in distance higher education. These programmes have been administered in a centralized and uniform way. Distance higher education in social sciences has continued to be delivered in a decentralized way.

Since the beginning of the 80s, further education has become an equal function of universities and colleges of higher education in connection with research and initial education. Therefore, 160 postgraduate courses of study lasting up to 4 semesters (organized as distance education) are offered with and without a qualification in a special subject ("Fachabschluß"). Additionally, nearly 500 short courses are run annually. Their content is oriented towards the introduction and the use of key technologies that are decisive for encouraging the growth in productivity and the renewal of production. In this way the large intellectual potential available to our country can be considerably improved in its social effectiveness.

It is our aim to realize the principles which are decisive for the success of distance education:

Working people take part without interrupting their professional work in initial and further education organized as distance studies. Therefore, there must exist a far reaching conformity between professional work and initial and further education by distance education. That goes for the scientific content and pedagogical and organizational aspects. For this reason, professional work and chosen field of study should correspond. Rich experiences in the life and profession of the participants in distance education are consciously put to use in the shaping of content and the methodology of initial and further education. Practical and professional experience can be fruitful to higher education. Work and study activities are interwoven in a productive way, for example, by taking up the problems of production in scientific work during initial and further education. The newest research results are immediately transferred into practical use through the working distance students. The professional work of the distance students is theoretically supported step by step. These graduates of distance education very quickly achieve a high standard of performance without the need for a preliminary probationary phase of employment. The working participants of distance education become "outstanding intermediaries between science and production" (1, p.224). This is the best example of the connection between theory and practice.

The general tendency which characterizes higher education:

To connect the transformation of selected knowledge with the development of abilities (such as general and scientific - or work related abilities) also determines the qualification of working people in distance education. In basic studies the introduction in methods and techniques of intellectual activities and the development of capacities in scientific work, especially in the recognition and solution of scientific problems, is a main factor for us. A greater flexibility among the graduates of distance education is in this way ensured. In subject related studies and in limited specialized studies, tasks which are similar to research are undertaken. In preparation for the diploma degree, research projects are carried out on subject matter that is part of main research projects of the university or college of higher education. In contrast, the main fields of investigation for the distance students, including postgraduates, are found in the factories. The unity of research, teaching and study is accentuated. Distance education addresses social problems and undertakes tasks arising from the central and regional plans in science and technology.

As the work and study process are closely connected in distance education the character building potential which is inherent in the struggle for peace and scientific and technological progress in profession and study can be used effectively for the development of the personality of the distance student. In this context the unity of training, education and self education is guaranteed to a high degree. The specific consultations, seminar courses and the final phases for the preparation of diploma theses, which are part of the distance education process, lead to personal communication and cooperation between staff members and distance students. This is an irreplaceable condition for the formation of socially responsible and scientifically highly qualified personalities. This partnership is typical of higher level education.

In our higher education system, initial and further education, full time and distance studies are developed as an organic whole. This has the effect that the qualitatively and quantitatively well provided staff of the 53 universities and colleges of higher education are responsible for both initial and further education. These staff members are engaged both in full time and in distance education activities in 20 of these institutions. That is why no special distance university has been set up in the GDR as in other countries. (See 3, p.42.)

Close cooperation between industrial combines ("Kombinate"), their factories and the universities and technical colleges is a characteristic of the GDR, as well as in agricultural cooperatives and other state and social institutions. This cooperation in distance studies is complex and many sided. There is cooperation in counselling, in the delegation and admission of future distance students, in motivating and stimulating the employees as distance students and in helping them in work and study on the basis of a contract ("Forderungsvertrag"). This support is particularly important for the topics of final theses and in guaranteeing legal conditions for giving time off work for studies. Distance students are given 48 days leave per year (students of social sciences are given 36 days with full pay). All distance students have three months off work to write their diploma thesis. There are also similar regulations for participants in postgraduate studies.

These principles are kept in mind when a didactic concept of higher level distance education is worked out:

As the aims of initial full time and distance studies are the same, fields of study are fixed in the one curriculum. According to different preconditions of the students there is a differentiation in the choice of content. This is secured by directives for teachers ("Lehrhinweise") and study instructions for distance students ("Studienanleitungen").

Individual study forms an important part of initial education by distance studies. In the university, distance self study periods last fourteen days. There are 20 study periods a year. The student has a tutor (consultant) for these study periods.

The quality of individual study is determined by various factors. On the one hand quality of individual study is promoted by the mastering of the methods and techniques of individual study and its self assessment by the students. The guidance of the tutors, and the quality of the printed study material which contains the scientific content and study guidance, as well as exercises and checking, can be worked through by using personal computers in colleges and factories, these all help the individual student in his or her individual distance studies.

Individual study is followed by consultations with student groups in consultation centres. Problems of content which arise during individual study are discussed and solved. In conjunction with the consultations, printed and audio visual aids are used, especially closed circuit television. From time to time, tests and examinations take place.

Seminar courses which are made up of lectures, seminars, exercises, practical work, excursions and examinations mostly take place at the beginning and end of the academic year. Scientific discussion is a characteristic of these seminars.

During the second part of the initial distance studies there are longer periods of individual study and independent scientific work. Seminar courses of two weeks in all are included.

In the final part, that is the preparation of the diploma thesis, research work is carried out and on the basis of this a diploma thesis is then written which has to be defended. (See 4, p.26).

At the postgraduate level, on the basis of individual studies, consultations and seminar courses also take place. Discussions are controversial and polemic. Short contributions by the participants to the discussion are of growing importance. Research and developmental work are integrated into the seminars and leads towards the final thesis. (See 5, p.51).

The initial education organized as distance studies in the first part takes place in consultation centres which are sited favourably in the neighbourhood of the participant's home. In the final parts of the programme the consultations occur in the college where the participants matriculated.

The centres for further education are particularly well suited to postgraduate study.

In accordance with the further shaping of developed socialist society in the GDR, the reform of initial and further education of engineers and economists was introduced in the middle of 1983 and at the beginning of 1986 followed the introduction of a long term development of the initial and further education of agrarian engineers and economists at the universities and technical colleges of the GDR. Corresponding conceptions were decided upon. (See 6 and 7).

The following aims in education policy were pursued (8, p.58):

In future all engineers, agrarian engineers and economists ("Diplomwirtschaftler") will be educated within one single higher educational process in which the different needs of their future employment are taken into consideration with a differentiated way of studying. The initial and further education as a whole is realized with higher standards.

The education of technicians and economists without a diploma degree ("Wirtschaftler") in industry and agriculture will be ensured by a new level of technical and economic education.

The consequences for the development of distance and evening studies for engineers and economists are also set down in a new conception (See 9). And the further general development of achievement in further education in universities and colleges for those graduates doing practical work has been conceived (See 10).

The improvement in standard and effectiveness of distance education should be made clear in a fundamental way. (See 2, p.277).

The newly worked out conception for distance education of engineers and economists concentrates on the decisive study fields for national economy. Admissions for the academic year 1988/89 in the subjects of informatics, engineering in material, nuclear power engineering and accountancy/statistics will take place.

Skilled workers with a secondary school certificate ("Abitur") will be accepted into initial education organized as distance education. They attain the final certificate at universities ("Hochschulabschluß") which allows them to work as an engineer or economist. The shortened period of study for engineers will be 5 years, and for economists 4 1/2 years. It is possible for them externally to carry on their education in postgraduate studies up to diploma level.

Engineers and economists who are graduates of the former technical college ("Fachschulabschuß") can achieve by means of postgraduate distance studies the final certificate at university or the diploma degree.

In both forms of higher level distance education we aim to realize fully the above mentioned principles; the unity and interaction of theory and practice, of research, teaching and study, of training and education, of initial and further education, of basic, subject related and specialized studies, whereby the development of the capacity for independent scientific work is integrated and accentuated. This new standard will be guaranteed by the perfection of the content. The demands of the scientific and technological revolution make the implementation of new fields of study necessary.

In future, all parts of distance education will take place uninterruptedly in the university or college of higher education, where the distance students matriculate. Selected parts of the course can be carried out by changing the university in order to make use of CAD/CAM Centres, special laboratories and technical schools ("Technikum").

Evening courses should be implemented again in densely settled industrial areas.

Special studies for women with special arrangements for them will be encouraged.

Last but not least, the existing agreements on coordination between industrial combines and universities will ensure the admission of working distance students whose studies are linked to the overall development plan.

University related further education will concentrate on the main areas in society (11, p.167) as follows: information processing, computer technology and CAD/CAM technology, microelectronics and automization technology, biotechnology, energy economy, material sciences and their natural scientific foundation in solid state physics and chemistry, management studies, foreign trade studies, foreign languages for interpreters, foreign language studies for teachers and for non linguists.

The successful organizational forms and methods will remain, postgraduate studies will be defined, the need for short courses will continue to increase. Research oriented seminars will be given priority, they are organized in a problem oriented way. Part time studies in particular areas of teaching and observation in lectures of student choice ("Gasthörerschaft") will be broadened.

In order to suit the complex demands of the professions, interdisciplinary further education activities are to be promoted.

It must be noted that the initial and further education in all other areas of study (that is outside technical, agricultural and economic sciences) in the form of distance education will remain unchanged.

Factors which have facilitated or impeded the achievements of objectives in distance education

In addition to the implicit investigation of the factors which facilitate or impede distance education we should now look at these factors more explicitly. A more concrete knowledge of these factors is a decisive precondition for its qualitative and quantitative continuing development.

A basic analysis of the social demands made on the working people with regard to their qualification is a decisive precondition for planning the aims, content and didactic shaping of their initial and further education within distance education. That is also true for the relevant personal preconditions of this group of people. Experience in life and work and their educational background are of great importance. The more the social needs and personal preconditions are taken into consideration by fixing the aims and content of distance education activities the better the expected success in distance education will be.

If we succeed in using the acknowledged principles when planning the distance study process in an optimum way then the standards and efficiency of initial and further education through distance studies will be much higher.

The guarantee of a coordinated professional and study process is a solid basis for designing effective and time saving initial and further education.

Above all, the experience of life and of work of distance students is paramount in the adoption of activating ways of working in higher level distance studies.

As full time and distance studies are taught by dual mode universities and colleges of higher education, it is necessary to work out the specific requirements of distance education and also to put them into practice.

The value of practical experiences of working students is not always recognized. Furthermore, tutors need to be skilled in helping students both to integrate their wealth of practical experience within a broad theoretical framework and to draw out the practical applications of the theoretical studies. It is important that tutors encourage students, especially those in the early stages of their higher level distance studies, to integrate the practical and theoretical aspects of their studies. Convincing demonstration of the theoretical foundations for flexible work and further study in the future is also necessary. The compilation of the special printed material, which is used in individual study and the testing of the results which are organically linked with the transmission of scientific knowledge, should not only include a motivating presentation of the social and scientific function of the content but also its constant practical use.

The consultations are not always effective because of inexperienced teaching staff. Too often the students are not helped with their study problems and tutors fail to help the students relate the new knowledge covered in the course to the students' existing learning. Training in didactics is of the utmost importance for such teachers.

The necessary continuing or periodical checking of study progress must rest to a greater extent on the self assessment by participants. Checking is in any case not simply an instrument in the hands of the staff.

The closer the cooperation is between the working students and the factory and the university or college, the more efficient is the study process and the greater its success will be. Therefore cutting down the time spent on individual study in favour of professional work must be avoided. There should be no impediments on the regulations of giving employees study time. Failings of this kind endanger the effective studying process which can be obviated by closer cooperation between the university and the workplace.

University pedagogical and psychological qualifications of the teaching staff engaged in distance education is important. Therefore, for many years in universities and technical colleges, pedagogical qualification in distance education is an inherent topic.

It seems significant to inform teachers in distance education about new breakthroughs in adult psychology such as were discussed at a special symposium at the XX11nd International Congress on Psychology which took place in Leipzig in 1980 for the first time.

At last our efforts are aimed at completing the material technical basis of initial and further education within the system of distance studies. One of the problems which ought to be solved is that of the insufficient number of suitable hostels for participants at consultations and seminar courses.

The use of new information and communication technologies in distance education

The general introduction of informatics and the use of computers in university education (see 13) have come about also in the field of initial and further education organized as distance education.

In order to train specialists in informatics a corresponding field of basic study has been recently created. Working people can follow courses of study whilst still at work within a period of four years through distance education.

It is our aim to introduce informatics training in a user oriented way for all students.

As an example of this the continuing training in informatics for economists and diploma economists in three stages should be explained. In the first stage all students are given a basic training in informatics which is computer based. For some 15% of students studying economics a more in depth training in informatics is provided as the second stage. Finally, a third stage of training has begun to train specialists in economic informatics. (See 14, p.198). In this way the updating of distance education in economics is characterized.

We pay much attention to further training in informatics and the use of computers for graduates working in a professional field by preparing postgraduate studies lasting several semesters and also various short courses. This is represented by the postgraduate course of study "Computer- based plant automation" at the Technical College of Higher Education in Leipzig which is organized in the form of distance education (15, p.273).

Practical work combined with theoretical instruction is carried out at computer terminals in the university or in the factories of industrial partners. A final thesis which is valuable for both the university and the factory must be written and then defended.

The didactic forms undergo changes in the course of initial and further education when computers are involved. Working procedures in the form of exercises and training, for instance computer based case studies and projects ("Planspiele"), practical sessions and complex computer management exercises relevant to decision making, have been introduced. Mostly work goes on in computer cabinets, at CAD/CAM stations and suitably equipped places for managers. Universities and factories have received and still receive, the necessary computer equipment, especially personal and office computers.

To secure high standards and efficiency in the didactic and methodical shaping of initial and further education, organized as distance education, all our younger colleagues will receive further education in the field of university pedagogics.

The completion of initial and further education in informatics and the use of computers leads also to the more general introduction of information and communication technology in higher level distance education. For this purpose the computers of the university, the central macro computers and personal desk computers are available. The technical and material equipment in the factory of the distance student concerned can also be brought into use.

The improvement of regional cooperation in distance education

In 1969, a central office for higher level distance education was set up in the GDR. This office is responsible for the whole of distance education at the universities and colleges of higher education. It coordinates the work of 200 consultation centres which belong to the universities and the colleges of the GDR. The management aims to provide guidelines for teachers and study instructions for distance students. It is in charge of the coordinated production of printed material. Sessions related to the qualification for managers and tutors are provided. This process of concentration and coordination also takes place in the field of further education. In order to bring about rapid developments so called centres and complexes for further education were created. The centres for microelectronics consist of 13 universities and colleges of higher education and 2 technical colleges.

Research work carried out in initial and further education organized as distance education is run by the Central Institute for Higher Education in Berlin. This institute of distance students in research work in the field of university and technical college pedagogics is significant. (See 16, p.19).

The GDR is integrated into coordinated research of the problems of the higher education system by the Conference of Ministers of Higher Education in Socialist Countries at the XVth Conference in Prague at the end of 1986, in which 17 countries took part, a draft plan for research for the period 1986 to 1990 was discussed and agreed upon. The content and methods used in higher education and in the organization of postgraduate education at universities were the main subjects of discussion (17, p.32). These topics are also relevant for the further development of university distance education.

Significance of international cooperation

In the GDR we are interested in gathering internatioanl experience which is important for the further development of higher level distance education. We wish to use it in a creative way for solving those problems which face us up to the year 2000.

I would especially like to thank the Unesco Secretariat and Deakin University for the invitation to attend this internationally important consultation.

References

1 Fiedler, P., König, B. (1979)
Hochschulfernstudium - Ausdruck sozialistischer Bildungspolitik. In: "Das Hochschulwesen", Berlin, no.8

2 Schwanke, S. (1986)
Entwicklung des Fern - und Abendstudiums für die Ingenieur - und Ökonomenausbuldung. In: "Das Hochschulwesen", Berlin, 1986/11.

3 Daniel, J., Stroud, M. and Thompson, J. (1982)
Learning at a Distance: A World Perspective. Athabasca University, Edmonton

4 Möhle, H. (1983)
Higher Education and Postgraduate Studies in the GDR. Organized as Distance Education. In: "Higher education in Europe", Quarterly Bulletin of the European Centre for Higher Education, July-September vol.V111, no.3.

5 Möhle, H. (1982)
Postgraduate study by means of distance education in the GDR. In: UNESCO/ CEPES: Distance Education for the Up-dating of Knowledge of Postgraduate Level. Bucharest

6 Konzeption für die Gestaltung der Aus - und Weiterbildung der Ingenieure und Ökonomen in der DDR vom 28. Juni 1983.

7 Kozeption für die langfristige Entwicklung der Aus - und Weiterbildung der Agraringenieure und Agrarökonomen au den Hoch - und Fachschulen der DDR vom 28. April 1986. In: "Das Hochschulwesen", Berlin, 1986/7, S.167 ff.

8 Böhme, H.J. (1985)
Aus - und Weterbildung der Ingenieure und Ökonomen. In: "Das Hochschulwesen", Berlin, 1985/3.

9 Kozeption zur Entwicklung des Fern - und Abendstudiums für die Ingenieur - und Ökonomenausbildung. In: Sonderdruck der Verfügungen und Mitteilengen des MHF, August 1986.

10 Kozeption des MHF zur weiteren Engwicklung der Weiterbildungsleistungen der Universitäten und Hochschulen für die in der Praxis tätigen Hoch und Fachschulkader. Ministerium für Hoch - und Fachschulwesen, Februar 1987.

11 Kottowski, W. Zinkahn, B., Langfristige Orientierungen und Rahmenbedingungen für die Entwicklung der Weiterbildungsleistungen des Hochschulwesens. In: "Das Hochschulwesen", Berlin, 1987/7.

12 Löwe, H., Lehr, U., Birren, J.E. (1983)
Psychologische Probleme des Erwachsenenalters. XX11nd International Congress of Psychology. VEB Deutscher Verlag der Wissenschaften, Berlin, 1983.

13 Möhle, H. (1987)
The influence of informatics and of the use of computers in the content and methodology of higher education. 5th EARDHE Congress "Higher Education and New Technologies", University of Utrecht, Netherlands

14 Apelt, S. (1986)
Durchgängige Informatikausbildung in der Grundstudienrichtung Wirtschaftswissenschaften. In: "Das Hochschulwensen", Berlin, 1986/8.

15 Burucker, G. (1985)
Postgraduales Studium "Rechnergestutzte Anlagenautomatisierung". In: "Das Hochschulwesen", Berlin, 1985/9.

16 Möhle, H. (1983)
The development of creative personalities through independent academic work in distance education. In: Bulletin of the International Council for Distance Education. Manchester, May

17 Lang, H. (1987)
Information Uber Ergebnisse und Verlauf der XV. Hochschulministerkonferenz sozialistischer Länder in Prag vom 14.-17. 10. 1986. In: "Das Hochschulwesen", Berlin, 1987/2.

Jordan:
Higher Distance Education in the Arab World

Walid Kamhawi
al-Quds Poen University
Jordan

Introduction

Statistics for the Arab world, including the Occupied Territories, indicate an upsurge in the demand for higher education. While this is due in part to the high rate of natural increase among Arabs, especially among Palestinians, and a population distribution skewed in favour of youth, it is also an inevitable consequence of living in a changing society and responding to the demands of modern life. Thus, the traditional thirst for knowledge, so deeply ingrained and valued in Arab culture, is combined with the growing awareness that education is the key that links the individual to the development of his or her society and provides the individual with increased job opportunities and improved socio economic standing.

Projections of the number of high school graduates and other students seeking higher education in the Arab world by the year 2000 indicate that these will have far exceeded the capabilities of conventional universities in the area to absorb them. Moreover, despite the expected increase in the number of teachers, they will still fall short, both in terms of quality and in the totals required.

Apart from increased individual demand for higher education, Arab states are themselves placing greater emphasis on higher education. These states are increasingly concerned over the human wastage that is resulting from large pools of former or potential students who are deprived of a chance for higher education and forced into unskilled labour or into leaving the region altogether in search of opportunities abroad. Accordingly, there is a growing perception of the need for higher education, and life long education, vocational training in order to train skilled, professional and productive manpower to contribute to social and economic development in their respective sociaties.

There is an additional dimension to the problems facing the region. This concerns the specific case of the Palestinian people, particularly those under Israeli occupation who are facing the disintegration of their society and increased dispersion throughout the Arab and other countries. The extent of Palestinian dispersion is illustrated in Table 1 (see appendix). While the total Palestinian population is now estimated to be just over five million and expected to rise to nine million by the year 2000; it is scattered among various countries worldwide, with less than half (about 41%) residing in its actual homeland.

The estimation of the number of Palestinians enrolled in institutions for higher education is rendered difficult and still incomplete. A figure of 60,000 was estimated by Unesco for the academic year 1977-78 and this figure is expected to exceed 100,000 by the end of the century. That is, roughly 10% of the 18-30 age group were enrolled in an institution of higher education. Furthermore, during that year (i.e. 1977-78) there were 5,093 students enrolled in the six universities of the Occupied Territories (5 in the West Bank and one in the Gaza Strip); which is less than 1% of the 18-30 age group.

For the rest of Arab countries the picture is similar. Between 1970 and 1982, the number of Arab university students jumped from 444,000 to 1.4 million.

Concerning the teachers at university level, it is estimated that by the year 2000, the Arab world will need over 380,000 (compared with 85,000 in 1982 which still makes the teacher student ratio 1:18, a relatively high figure compared to the rest of the world). Regarding the Occupied Territories, the shortage in teaching personnel is illustrated by the following statistics for the Occupied Territories. In 1984/85, there were 630 teaching staff in all 6 universities. Of these, only 305 held a PhD degree.

From this it can be seen that even though a number of new conventional universities should be established in Arab countries they still could not cope with the increasing demand for higher education. The inability of the conventional universities to cater for this need, coupled with socio political and/or socio economical factors, makes an Open University an urgent necessity to Arab countries in general and to Palestinians in the Occupied Territories in particular. It is in response to such concerns that al-Quds Open University (QOU) has been established. With its headquarters in Amman, Jordan, it is the first of its kind to introduce open distance higher education to the Arab World. In the first phase of its operations, to be started in October 1988, eligible Palestinians in the 18-40 year range, whether residing in the Occupied Territories or outside Palestine, are to constitute the targeted student population for distance learning. Thereafter, successive phases will expand distance learning to other parts of the Arab world, to include both Palestinian and other Arab students alike.

QOU objectives

One of the most central objectives, which is perhaps unique to the system of open learning and which is especially emphasized by QOU, is to educate and generate a new kind of student and citizen in the Arab world, one who is:

- trained in a profession, vocation or skill that allows him to assume a productive role in his society, and

- trained to be a learner, an innovator, a self sufficient and productive human being who is able to meet the various challenges of a changing society and overcome the hardships of living under abnormal and difficult conditions.

Other objectives discussed in the paper include:

- To meet the increased demand for higher education among Palestinians and Arabs, in view of both the limits and restrictions on the absorptive capacity of conventional universities in the region.

- To provide both Palestinians and Arabs who are unable to enrol in regular universities, with the opportunity to pursue higher education (for example, women, older students, workers and the handicapped).

- To halt emigration and the brain drain from the area.
- To improve and up-grade the skills of teachers (in service training) which would, in turn, contribute to raising educational standards at all levels.
- To provide vocational training, managerial and other skills to raise the socio economic standing.
- To provide specialties and programmes often lacking in conventional institutions that are relevant to the developmental needs of the region.
- To provide a framework for cooperation and coordination between existing higher education institutions in the Arab world, and to develop programmes and courses in Arabic in areas of modern science, technology and the like.

al-Quds Open University programmes

The QOU plans to offer two types of educational programmes: degree programmes leading to the BA/BSc; and programmes in continuing education and vocational training and other skills which will enhance the socio economic position of individuals and contribute to social development.

In addressing the individual and development needs of Palestinians and Arabs, QOU plans to offer degree programmes in five key areas:

- Technology and Applied Sciences.
- Home and Family Development.
- Land and Rural Development.
- Management and Economics.
- Education and In service Teacher Training.

The emphasis in these programmes is on the interdisciplinary approach and there are two main objectives that underlie such a selection: first, that they respond to actual educational and societal needs, and second - in a feature characteristic of QOU educational training - that they encourage self employment. By fostering individual initiative and independent and critical thinking, QOU is internationally departing from the traditional rote system of education in the Arab world and is concentrating on offering programmes in fields that are vital to the region's development; such as home economics, mathematics and computing, teacher training and especially agriculture and related fields.

A cursory look at programmes offered at universities in the Occupied Territories, for example, reveals the widespread duplication, especially in such programmes as humanities, basic sciences, business and public administration and religious studies. The Arab world as a whole exhibits a similar trend: in 1980-82, for example, of the 156,400 students approximately who graduated from universities in the Arab world most were concentrated in such fields as business administration, humanities, education, engineering, sciences and health, with the lowest number in agriculture.

In contrast to such trends, QOU will play a pivotal role, not only in training Arabs to assume productive roles in the light of current market forces, but to enable Arabs to meet the challenges of a changing society and the emerging socio economic realities.

The role of communication technology in QOU

Because of the physical separation of the learners and the teachers in distance learning (DL), the interactive, as well as the proactive phase of teaching, is conducted through different types of media. Thus media is all important in a (DL) system. It includes the printed material, radio, television, audio cassettes, video tapes, correspondence, telephones, computers and new information technology. While recognizing the potential of various media, QOU has to select, adopt and use media after evaluation of the following factors: availability, accessibility, acceptability, validity and cost. These are taken into account with regard to the regional differences in the Arab World and their respective needs (particularly in view of conditions and restrictions operating in the Occupied Territories) and in terms of suitability of specific media to different educational programmes. While recognizing that the printed material is the most suitable medium, QOU has opted for a mixed instructional system including: electronic media such as audio cassettes and video tapes. Audio cassettes are extremely effective in imparting instruction, and their low production cost and easy handling as well as easy accessibility make them extremely attractive as a medium in QOU. Video tapes are preferred over live television broadcasting as they are more compatible with the goals of individualized and flexible learning in an open learning system, where the students will have the choice of watching the tapes in the study centre or simply having them copied to watch in the convenience of their homes. This will drastically reduce the dependence of QOU on radio and television broadcasting as media of conducting its educational materials. To cover this, QOU has already concluded an agreement with the Jordan company for Television Radio and Cinema Production Ltd., to use their facilities for the production of its educational material.

Although new information technology, including computer assisted learning (CAL) is also used in distance learning (DL), it remains a long term goal for QOU, since the use of computers as an end in themselves, or as a means of supplementing the instructional mix is seriously impeded by the lack of standardization in Arabic codes in the hardware and software, and Arabic will be the language used in QOU. This can be foreseen in the planned use of electronic publishing starting with the importation of word processors, proof read and edited text to page up programmes. With reference to this, QOU will be perhaps, the first Arab institution to carry its own developed printed materials from manuscript to the camera ready stage, thereby employing only a few people and thus reducing the costs of production to a minimum.

A long term goal involves the use of the Arab Satellite (ARABSAT) in distance learning at QOU. This option is already being considered as to how satellite technology may facilitate distance teaching in the Occupied Territories and the rest of the Arab World within an integrated system of open distance learning in the region.

Such use of technolgoy gives QOU an excellent opportunity to demonstrate that distance learning (DL) can be a very cost effective solution to the difficulties confronting many Arab countries in their ability to cater for the educational needs of their people.

Facilitating and impeding factors to the fundtioning of al-Quds Open University

Facilitating factors are:

- The thirst for the pursuit of knowledge facilitates the acceptance of a higher level education institution such as QOU.

- Awareness of the central role of higher education in improving individual socio economic opportunities in the society.

- The positive attitude exhibited by conventional universities, especially in the Occupied Territories, where there is an intense desire to improve and expand higher level education to meet increased demands and to improve both the standard of the teaching staff and academic curricula at all levels. In this, there is recognition of the highly qualified professionals contributing to the development of educational programmes and the desire to benefit from these new programmes. Also noteworthy is the widespread support for QOU and the willingness of regular Palestinian universities to provide whatever facilities are needed by al-Quds Open University (including study centres, tutorials, teaching materials, laboratory facilities, and the like).

Impeding factors were experienced in implementing the QOU project were:

- Lack of experts and professional personnel in the field of distance learning (DL).

  The following skills are not fully developed in Arab countries:

  - Basic and advanced production techniques,
  - Script writing,
  - Graphics,
  - Presentation techniques,
  - Editing in print, audio and video
  - Instructional design,
  - Orientation on educational material.

  Having recongnized the training needs in the above mentioned areas, QOU is proceeding to train the required personnel concurrently with the implementation of other aspects of the QOU project by making:

  - Arranging local training with the help of local and foreign experts.

  - Arrangements for trainers and traineees to be trained abroad.

- The time and effort required to develop programmes in Arabic which are relevant to the culture and needs of the area.

  QOU is committed to developing programmes in Arabic. It, therefore, follows that all the information, through whatever medium, will be disseminated in this language. Although it is possible to benefit from distance learning programmes of other open universities and even adopt some of them for use in the Arab world, both the culture and the socio economic context of the Arab world require the development of specific programmes relevant to the area that are difficult to import from abroad. It will, therefore, require some time and effort before such programmes are produced in Arabic. Each programme will have to be adapted to the special context in which it will be taught especially in the fields of science and technology, where most of the scientific terms are not yet translated or available in Arabic.

- Unfamiliarity with, and insufficient acceptance of, the methods of open systems of distance learning in the Arab world.
  Some effort is still needed to dispel some of the misunderstandings and unfamiliarity surrounding the nature and goals of distance teaching within an open education system. Officials and educators at regular universities must be assured that higher level distance education does not pose a threat to their institutions but rather complements their own efforts and objectives to make higher education available to those who need it, helps ease the strain on conventional universities and fills the gaps in their programmes and specialties.

- The need to ensure an efficient system of delivery under foreign military occupation.

  An efficient system of delivering the instructional materials between QOU and the Occupied Territories is of prime importance. This system should be able to overcome and by pass the obstacles placed by the Israeli authorities which include: forbidding teachers from working outside their areas; banning of academic books; closure of universities; disruption of normal courses and restricting the expansion and establishment of various fields of study like agriculture, applied sciences and technology.

Regional and International cooperation

There is a growing realization among officials and educators in the conventional Arab universities in general and the conventional universities in the Occupied Territories that QOU shares with them the common goal to make higher education available to those who seek it and to raise both the educational and socio economic standards of Arabs and Palestinians in their respective societies and complete the gaps in their programmes. It is also recognized that QOU has succeeded in tapping the resources and skills of the best professionals in their field, who of those can produce programmes to the standard of quality and excellence demanded by the university, and it has adopted the latest in communications technology in the service of higher education in the Arab world, from which everyone will benefit.

Consequently, it is observed that more and more regional institutions, individuals as well as international bodies, are enthusiastically extending their services and facilities in support of QOU and its goals. These are discussed under regional cooperation which include the Palestinian and Arab contexts and international cooperation.

Regional cooperation

The Palestinian Context

In the Occupied Territories, QOU has no aim of becoming a separate entity, one that functions apart from existing education institutions. Rather, it seeks to develop a fundamental and integral relationship with these institutions.

Significant progress has already been made in this sphere, as for example, in the cooperation between QOU and the UNRWA/UNESCO Institute of Education in the Occupied Territories. One of the central objectives underlying this cooperation is to evolve a single programme of teacher training that is available to all Palestinian teachers in the Occupied Territories (UNRWA, government and private). More specific objectives include,

- expansion of the programme of teacher training into a university degree course (compared to the current two year programme);
- provision of training for kindergarten teachers as a special category; and
- the offer of diplomas in education to university graduates.

QOU is also cooperating with existing universities, colleges and vocational centres in the Occupied Territories. Part of this coordination involves the establishment of local

study centres affiliated with QOU at these locations. Universities, in particular, are undertaking to provide facilities such as laboratories, technological instruments (radios, televisions, and the like) tutors and instructors, and the services of their administrators their to help QOU in the distribution of its instructional materials.

The Arab Context

Regarding the Arab world, the following points of cooperation are considered by QOU:

- Cooperation and coordination in the design and production of high quality programmes in Arabic and in specialties required in the specific socio economic settings.
- Taking advantage of the hundreds of Arab professionals and experts in education, particularly those trained in modern technology and communications technology. These will contribute to the development of programmes as well as in adapting various technologies for use in distance teaching.
- Facilitating the transfer of credits between conventional universities and QOU.
- Cooperating in the provision of facilities both inside and outside the areas where QOU regional offices are located (tutors, technological facilities and the like).
- Provision of training for administrators and other employees at QOU.
- Arab organizations, such as the Arab Fund for Social and Economic Development can continue to cooperate with QOU. In the past this organization provided funding for QOU's feasibility study. Others can be approached for funding, technological facilities, personnel training, financial support of needy students, and so on.
- Arab Higher Education organizations and ministries can work for the full accreditation of QOU.
- Arab media organizations and networks can help with the production of course materials and programmes.

International cooperation

QOU has planned to extend its cooperation worldwide through:

- Contact with open universities worldwide, exchange of programmes and materials and benefiting from their experience in higher level distance education.
- Cooperation with international organizations, especially those that may secure funding, technological facilities, training of personnel - particularly those in administration, communication technology and programme development.

In this respect, it is worth mentioning the special role for Unesco which has contributed since its inception of QOU (in its feasibility study, 1980). Unesco can play a vital role in providing and attracting funding, programme production, technology and

achieving recognition and accreditation of this university. Unesco can also send consultants and put QOU in contact with other organizations in the field.

Recommendation

There is need for research into a number of areas that would increase the effectiveness of QOU in the region:

- Research into the educational needs of specific regions in the Arab world (in view of the diversity in the area) feasibility, costs, types of programmes, educators, facilities, personnel and existing technology. This will facilitate establishment of the regional centres of the university.
- Research into how existing communications technology can be applied and adapted to suit the needs of specific regions and as relevant supplements to specific educational programmes.
- Research and development in the area of computer assisted learning, particularly in the establishment of learning centres and in training students and others in this field.
- Research to explore the uses and benefits to distance learning of ARABSAT.
- Exploring further avenues of cooperation and coordination with other private government and international organizations and distance learning institutions worldwide.

Appendix 1

Table 1 Distribution of Palestinians over the entire globe for 1985

Country or region of Residence	Number (in thousand)	Percentage %
In Ex-Mandatory Palestine (including the West Bank and Gaza Strip)	2010	41
Jordan (East Bank)	1127	23
Lebanon	392	8
Syria	245	5
Kuwait	320	6.5
Other Gulf States	100	2.0
Saudi Arabia	250	5.1
Iraq	44	0.9
Egypt	49	1
Rest of the world	340	7.5
Total Population	4900	100

1. POU UNESCO Feasibility Study Annex i, p.39

Nigeria:
Higher Level Distance Education in Nigeria

A Segua Sagoe

University of Jos
Nigeria

The advent of free primary education in parts of Nigeria in the fifties and its spread to all parts of the country in the seventies, has increased the literacy rate and an awareness of further education. Compulsory primary education is yet to be vigorously applied. The literacy rate among the 15- 45 years age group is still only 30%. Nevertheless, this percentage represents millions of people. If given the opportunity they can continue their education up to secondary, technical/vocational and even university level. The numbers of students entering grammar schools, technical/vocational and teacher training colleges are nearly three million, 76,000 and 300,000 respectively in 1984. For postsecondary institutions 50,000 enter colleges of education, 59,000 enrol in polytechnics and colleges of technology while 20,000 enter the universities. These figures represent only 5% of potential students looking for admission into tertiary institutions of learning. Most of the young, therefore, seek jobs in offices, factories or start petty trading. The lot of this large body of citizens can be improved by the provision of non campus based education.

The stage of Nigeria's development demands that an innovation like distance education should help citizens enrich their understanding of their environment (social mobilization), acquire skills and specialize in their careers in order to increase their job opportunities and enhance the country's economic growth.

The need for distance education might therefore be such as to:

- raise the literacy rate above 30%;
- upgrade formal education of secondary school level students, the 15-18 year olds;
- introduce secondary school level students to technical/vocational studies;
- provide postsecondary school leavers an opportunity to gain higher qualifications while they are earning their living;
- provide in service training of workers with refresher or enrichment courses;
- offer degree courses for those with adequate qualifications but who are not able to secure places in existing conventional tertiary institutions of learning;

- provide postgraduate courses to those professionals like bankers, accountants, doctors who need such qualifications to ensure their promotion to positions as consultants and managers.

Distance education enables mature students to learn on the job at their own pace with independence. It is more attractive to developing countries because infrastructural costs are less.

Small private institutes have spearheaded distance education in Nigeria. They run correspondence courses whereby students are prepared for recognized examination boards. There are numerous colleges of this type and they are of doubtful standard. The students' interests, therefore, need to be protected. The Federal Ministry of Education has so far this year (1987) approved only four institutions of this type; two in Lagos, one in Onitsha, and one in Warri. The programmes offered are rather extensive, as many as twenty subjects. Testing and evaluation to analyze the extent to which specified learning objectives have been accomplished are not adequately monitored by government because it lacks the machinery to do this. These colleges, however, satisfy demand by many postsecondary level students to acquire some knowledge in a professional discipline. This foundation can be built upon later when opportunities occur. Subjects offered include accountancy, advertising, insurance, secretaryship, salesmanship, purchasing, marketing management etc. The students are prepared for the Royal Society of Arts examinations, City and Guilds, Institute of Chartered Secretaries, Institute of Chartered Accountants, Institute of Bankers, Institute of Commerce etc. The methods used are mainly printed materials, prepared lecture books and summaries, pre examination encyclopaedia, test questions, model answers and revision handouts. Face to face tutorials constitute no more than 10% of the course time.

Teacher education at Grade 11 level, National Certificate of Education and Graduate level has been given a boost by government through the establishment of a National Teachers Institute whose aim is to train and upgrade teaching staff to staff primary and secondary schools in the country. Because of the large numbers involved, conventional methods would take longer to train them and the teachers would have to leave their present teaching positions which would cause more hardship. Distance teaching methods, using correspondence courses with prepared texts, have been adopted to complement contiguous teaching methods. With the development of electronic mass communications this mode will be used to augment further the system.

The Correspondence and Open Studies Institute (COSIT) of the University of Lagos has pioneered distance education at the graduate level in Nigeria. Since its inception in 1977 it has produced over 8,000 graduates in science subjects, business administration, accountancy and postgraduate teacher education. It is a department within the University system running parallel with conventional degree courses. It can, therefore, use the services of lecturers and the infrastructure of the university. A further advantage of this organizational structure is that the students are bound by the university's rules and are in turn protected by them. Evaluation is imperative as it is with conventional subjects because the degree awarded is that of the parent university of which it is an integral part.

The COSIT correspondence courses use the national mail system. Local study centres outside Lagos have been developed in other universities and more are proposed as the catchment area of COSIT widens. Contiguous teaching in the form of tutorials are arranged during the long vacation of the university.

An independent Open University was planned four years ago using a three tier organization: the headquarters, regional offices and local study centres. It proposed to have seven faculties: arts, business studies, education, environmental studies, law, social studies, science and technology. It did not take off, however, because of costs, inadequacies in telecommunications, power and the postal system and staffing shortages.

Financial resources continue to rest with the government. The fees paid by students are minimal. In terms of cost effectiveness, however, distance education has an edge over conventional methods.

An advantage of distance education which makes it more attractive than the conventional mode of learning is that students are not separated from their locality. In Nigeria this is an important socio economic factor which stems the rural to urban drift. Distance education enables mature students to remain close to their families.

Infrastructural facilities available are, however, not conducive to efficient distance education programmes. The postal system is slow and is even non existent in parts of the country. Only students within the big towns and who have enrolled in institutions in the same town have an assurance of speedy mail delivery. Even then, post office boxes have to be used. The proposed Open University had to plan for its own courier service. This would have added considerably to costs. The use of radio and television is limited because of incessant power shortages by the national electricity authority despite the bold steps being taken to commission new power stations and develop rural electrification. Many still depend on the use of private electricity generator sets and this may have to be a solution if local study centres are to function effectively. The use of solar powered communications equipment to by pass the national electricity supply is being explored by the government.

The reception of televised programmes is not uniformly received in all parts of the country. Thus, any distance education programme reliant on TV programmes will have to be limited to segments of the country.

Satellite transmission is available but still needs much improvement. Because radio and television sets are expensive for most individuals in the target group, centralized audio and viewing stations are used in local study centres. There is still a shortage of personnel for the design of video and cassette programmes in the form of technicians, graphic artists and mass communication experts. A start has been made in the secondary schools programmes whereby five subjects are televised in a five day time table by the National Television Authority: Biology, Maths, Physics, Chemistry and English language. There is a possibility of upgrading this type of programme for tertiary institutions.

No matter how comprehensive lecture notes and televised programmes are, students must have access to reference libraries in their locality. Specialized libraries for courses being taught will have to be set up in local study centres or arrangements made for students in local university libraries. This system is being used in the open studies programme.

Some private computer centres are developing instructional packages for business groups. Only affluent companies can afford such packages, for example, bankers. Telecasting surgical operations live to medical students is gaining ground because of the large number of students. These programmes, after suitable editing are then available in hospital video libraries. Inter institutional cooperation and exchange in similar areas need to be expanded.

Regional and international cooperation is needed for the exchange of ideas, and for innovation and adaptation of technologies to the local constraints.

Joint preparation of programmes with consultants from countries with well developed distance learning systems will rapidly enrich data banks of individual countries and later collaborative ventures in distance education should be brought to the attention of the Economic Community of West African States (ECOWAS). These courses would have credit transfer arrangements between countries in order to facilitate the sharing of resources. Financial aid will be sought through this community and through national agencies of well developed nations and the international agencies.

Thailand:
Higher Level Education in Thailand: a Country Report

Wichit Sarisa-an

Sukhothai Thammathirat Open Univerity
Thailand

INTRODUCTION

The past decade has witnessed many major developments in distance education in Thailand. These include:

- An Open University employing the distance teaching and learning system has been established. It is a state university offering home based education at the degree level, through the use of multi media, to people all over the country. It was the first Open University to be established in Southeast Asia. The Open University referred to is Sukhothai Thammathirat Open University (STOU) which was established in 1978. At present it has an enrollment of approximately half a million students of whom 90% are working adults. Each year approximately 12,000 students graduate from this University with bachelor degrees.

- The Department of Non Formal Education has been established to provide the public with non formal education. One method employed by this Department is the distance teaching and learning system, provided for the benefit of out of school youth. The programme offered is known as "Radio Correspondence Courses" and uses multi media, or integrated media, to provide instruction through correspondence and radio.

- The Educational Radio Network of Thailand has been established in accordance with the World Bank's Loans for Education Development Project. Since 1984, programmes have been broadcast nationwide. Table 1 shows the time that has been allocated to organizations concerned with education through the use of radio.

- A National Television Network for Education and Public Relations (Channel 11) has been set up. Through this network education programmes and government public relations programmes are broadcast nationwide, with each category occupying 50% of the broadcasting time. This project, which has received unconditional aid from Japan, will go to air upon completion in April, 1988. It is scheduled to operate 18 hours per day and will allocate 9 hours broadcasting time per day to educational organizations. Upon completion of the new network, Sukhothai Thammathirat Open University broadcasting time, currently 10 1/2 hours per week, will be increased to 26 hours per week. TV broadcasting time for other educational organizations will also be increased.

Table 1 Educational Radio Network

Organization	Hours Per Week	Nature of Programme
Sukhothai Thammathirat Open University	49 1/2	Educational Programmes of the University
The Department of Non Formal Education	25 1/2 20	Programmes for Schools Programmes for Radio and Correspondence
The Teacher Training Department	10 1/2	In service Teacher Upgrading Programmes
The Ministry of Agriculture and Cooperatives	7	Dissemination of Knowledge to People Engaged in the Agricultural Profession
The Ministry of Public Health	2 1/2	Programmes Aimed at Promoting Health Amongst the People

RECENT DEVELOPMENTS IN HIGHER LEVEL DISTANCE EDUCATION

Developments at Sukhothai Thammathirat Open University

Programme development

At present STOU offers courses through 10 Schools: Liberal Arts, Educational Studies, Management Science, Law, Economics, Health Science, Home Economics, Agricultural Extension and Cooperatives, Political Science and Communications Arts. The 6th National Economic and Social Development Plan (1987-1991) provides for the establishment of the 11th School. This is the School of Sciences and Technology which will offer courses in the following three areas:

- Computer Technology
- Printing Technology
- Electronics

Preparations are currently being made to enable these programmes to be launched by 1989.

Media development

In 1985, STOU entered into a cooperative project with the University of Guelph, Canada, to develop a computer assisted instruction programme called Videotex Integrated Teaching and Learning System (VITAL). At this stage, courses in Science, Mathematics and Statistics have been developed.

Development of Area Resource Centres

STOU has set up a variety of centres throughout the country to provide education services to students. At present, there are 8 Regional Centres, 76 Local Study Centres, 74 Library

Corners, 7 Agricultural Extension and Cooperatives Centres and 36 Health Science Centres. The University seeks cooperation from outside agencies to set up these centres and to use their existing facilities and resources. For example, cooperation is received from the Ministry of Public Health to use hospitals and nursing college facilities as centres where STOU students may gain practical experience.

Under the provisions of the Sixth National Economic and Social Development Plan (1987-1991), a new type of centre known as the "Area Resource Centre" will be established. Ten Area Resource Centres are planned to be set up throughout the country. These Area Resource Centres will serve as a network to provide media services and materials to students in regional areas. They will also serve to coordinate activities provided by regional and local study centres. For the current fiscal year (1988), the government has allocated a budget for the establishment of one centre in the southern region. It is expected to provide services before the end of 1988.

Developments in regional cooperation

Consortium on Innovations in Higher Education for Development

STOU has been designated by Unesco as the Lead Institution for the Consortium on Innovations in Higher Education for Development. In cooperation with the Unesco Regional Office for Education in Asia and the Pacific, STOU has, on several occasions, served as the venue for various workshops and seminars on distance education. The Unesco Regional Office in Bangkok also supports publication of the newsletter "Never Too Far". This newsletter provides a forum for the exchange of views amongst those interested in distance education at the higher education level.

Asian Distance Education Research Group

Four institutions in Asia, through financial assistance provided by the International Development Research Council of Canada, undertook joint research projects on distance education. STOU, representing Thailand, conducted research on "Occupational Benefits of Open University Education"; Universitas Terbuka of Indonesia on "Open University Tutorial Systems"; Universiti Sains Malaysia on "Off Campus Programme Student Characteristics"; and Allama Iqbal Open Univeristy of Pakistan on "Open University Drop Outs". The work proceeded very well and was followed by a workshop on "Asian Distance Education Research" at STOU between 18-21 March, 1987. Researchers involved in the above projects participated in the workshop. A final workshop is planned to be held in Pakistan by March, 1988. Further cooperation in distance education research is expected to result from this project.

Regional Resource Centre

From 26 November to 3 December 1986, a Regional Seminar on Distance Education was organized jointly by the Asian Development Bank (ADB) and Sukhothai Thammathirat Open University in cooperation with the Regional Office of Unesco, Bangkok. The seminar was attended by 51 participants from 17 member countries of the ADB. Ten official observers from international organizations and government bodies also attended. Several recommendations addressed to the governments of the participating countries and to international and bi lateral agencies have been made. One of these recommendations was the establishment of a mechanism for regional cooperation in distance education. A proposal has been made to establish a "Regional Resource Centre" for Asia and the Pacific. It will serve as a documentation centre and promote cooperation amongst distance education institutions in the Asia and Pacific Region.

The Asian Association of Open Universities

Realizing the significance of distance education in offering learning opportunities to mankind and recognizing that friendship and close exchanges amongst institutions of open higher learning can help develop distance education, the open universities within the Asian region have laid plans to found the Asian Association of Open Universities. One of the Association's main objectives is to expand educational opportunities available to all the people of the region and to improve the cost effectiveness of member institutions by exchanging management information, teaching materials and research.

The inaugural meeting is scheduled to take place in Bangkok from 12-14 November, 1987 and continue in Tokyo from 15-17 November, 1987. When established, the Association will play a vital role in promoting distance education in the Asian region.

Bi lateral cooperation between Allama Iqbal Open University and STOU

A proposal has recently been made for bi lateral cooperation between the Allama Iqbal Open University and Sukhothai Thammathirat Open University. A project on "Multi-Disciplinary and Cross Cultural Post Graduate Courses on Women's Development Studies" is being worked out between the two institutions.

Joint production of educational media

The educational television programme "Asian Society: The Impact of Rice Culture on Society" is being produced for distance education purposes under the International Cooperation Project of the Ministry of Education, Science and Culture, Japan. Scholarships have been awarded by the Ministry to enable academic personnel from foreign institutions to work jointly with academic personnel from Japanese institutions in producing educational media for use in the distance teaching learning system. Academic personnel from Japan, Thailand and the Republic of Korea are currently working together under this project in cooperation with the National Institute of Multi-Media Education, Japan. The television programmes to be produced will cover a wide range of subject matter. Information will be collected and filming conducted in such different Asian countries as the Republic of Korea, the Philippines, Indonesia and Thailand. The programme, which is a fine example of a joint production, will serve to promote a good understanding amongst the people of those countries and the region.

FACILITATING AND IMPEDING FACTORS

The following factors are of major importance to the successful application of the distance teaching learning system:

Infrastructure

As distance education employs the multi media approach, it is necessary that it has an adequate infrastructure, such as a reliable postal service and an efficient up to date tele communications system.

In the event that education is based on radio and/or television programmes, a well equipped production centre and a wide range broadcasting network is necessary. Without such supportive infrastructure as mentioned above, the system will not be able to reach its goals or target groups successfully and will be doomed to failure.

Availability of academic resources

The establishment of an open university requires academic personnel who can serve as course team members, course writers and part time tutors. Such resources should be drawn from various outside agencies, both public and private, and should include outstanding academics from other universities. The existence and sharing of such a pool of academic resources in society will facilitate the operation of distance education.

Political will and cooperation

The political atmosphere should be such that it is favourable and supportive of the establishment of an open university. The policy makers at the national level should possess a good knowledge and understanding of the distance education system and be willing to support its development.

Complementary and supplementary in nature

Distance Education Institutions should be accepted as being complementary to, rather than competitive with, conventional institutions otherwise there will be problems with regards to recognition and cooperation.

Leadership

The successful implementation of the distance teaching learning system requires a strong and dynamic leader. The administrator of the open university should be a person of recognized capability, experienced in the application of distance teaching systems, innovative and possessing foresight. He should be acquainted with modern communication technology and be supported by a dedicated team skilled in the planning and management of the distance education system.

Impeding factors are as follows:

Resistance

The operations of an open university will not run smoothly if existing universities do not recognize the potential and possibilities of the distance teaching learning system being employed. If the attitude of the public is not favourable, or if they do not have faith in the system offered, successful implementation will be difficult to achieve.

Lack of cooperation

Cooperation should be sought to utilize existing facilities to the maximum of use. To enable the open university to provide high quality education at a low cost, it is essential that the university receive cooperation from both the government and the private sector in using existing facilities. Lack of such cooperation will impede the successful operation of the system.

Lack of infrastructure

Without suitable infrastructure, such as a printing office, postal services and telecommunications system, an effective delivery system cannot be developed. This will hinder the development of the distance education activities.

Wrong attitute

It is important for the staff of the open university to have a positive attitude towards distance education and understand how it differs from conventional systems. They should also possess skills appropriate to distance education.

Capital investment

In the initial stages capital investment is required to finance the establishment of the university. Although an open university employing the distance teaching learning system does not have on campus students, it is necessary for it to have sufficient buildings for its headquarters, a production centre, a printing office and delivery facilities. Without adequate finance, development will be slow and the quality and efficiency of distance education may be adversely affected.

THE DEVELOPMENT AND USES OF NEW TECHNOLOGIES

The distance education system currently employed the STOU uses a multi media package which is comprised of the following different types of media:

Printed materials

These are the main media and are arranged in the form of self instructional materials which include both texts and workbooks.

Audio

Cassette Tapes Recorded with Course Block Materials. There are approximately three to ten 60 minute (C60) cassette tapes for each course block.

Radio programmes

There are approximately seventeen, 20 minute programmes for each course block.

Television programmes

There are approximately five, 30 minute programmes for each course block.

Computer assisted instruction

Provided for some selected subjects such as Science, Mathematics and Statistics. They comprise approximately 5 to 7 1/2 hours of each course block.

Tutorials

Approximately 15 hours for each course block.

Practicum

This is organized especially for those subjects which require practical experience. The number of hours devoted to practical training varies according to the nature of the subject.

At the Regional Seminar on Distance Education, held at STOU from 26 November to 3 De-

cember,1986 under the auspices of the Asian Development Bank and STOU in Cooperation with the Unesco Principal Office for Asia and the Pacific, it was recommended that feasibility studies should be initiated to evaluate the scope for geo stationary satellite technology for educational links in coutries where there is a prima facie case for using satellite TV and radio links. Governments of the participating countries and institutions concerned were urged to support the efforts of the developing countries in securing appropriate frequencies for operating geo stationary satellites and in safeguarding the orbital positions necessary for their future geo stationary satellites.

RECOMMENDATIONS FOR REGIONAL COOPERATION

- A regional association for distance education should be established. It should have a vital role in promoting regional cooperation by exchanging information, teaching materials and research. It should help to propagate and promote a knowledge of education through the use of the distance teaching system and develop the system's potentialities. It should further cooperate with official bodies and other parties directly or indirectly interested in education at a distance.

- A regional resource centre should be established. Such a centre should serve mainly as a documentation centre where text and non text distance education materials, such as course materials, pamphlets, films, micro films, audio tapes, video tapes and other related materials, can be stored. The centre should offer an information and materials exchange service for distance education institutions in the Asia and Pacific Region, as well as training and research facilities in the area of distance education. It should have a role to play in organizing regional seminars, workshops, conferences and programmes for visits by academics wishing to learn more about various distance education institutions.
- Bi lateral or multi lateral cooperation in specific areas or programmes. Four areas for joint efforts among distance education institutions can be identified:

  - media production;
  - training;
  - research and,
  - joint use of materials and joint course offerings.

Media production

Joint production of media or instructional materials should be promoted among distance education institutions through bi lateral or multi lateral cooperation. Specific areas of programmes can be selection to suit the needs and interests of the partners. As a variety of media are used in distance education, the area of interests can be grouped as follows:

Media	Area for Joint Production
Printed Materials	Production of Materials
Radio	Production of Radio Programmes
Television	Production of Television Programmes
Audio	Production of Audio Cassette Tapes
Video	Production of Video Tapes
CAI	Production of Courseware
Home Experimental Kits	Production of Kits

The production of the programme "Asian Society: The Impact of Rice Culture on Society" is a good example of how joint efforts can be applied to media production.

Training

Training in the use of media is of major importance to the success of distance education programmes. Training needs should be identified and joint efforts promoted as follows:

Media	Training Needs
Printed Materials	Joint Training in Printed Materials Production
Radio	Joint Training in Radio Programmes Production
Television	Joint Training in Television Programmes Production
Audio	Joint Training in Audio Cassette Tapes Production
Video	Joint Training in Video Tapes Production
CAI	Joint Training in Courseware Production
Home Experimental Kits	Joint Training in Production of Kits
Technical Support	Training Needs for Engineers and Technicians

Unesco's Regional Office for Education in Asia and the Pacific has, on several occasions, organized workshops for training in distance education. The workshops have been well received and of great benefit to the development of distance education.

Research

Two areas for joint research can be identified here. They are:

- research in distance education and
- disciplinary research.

The research carried out with the support of the IDRC, as mentioned earlier, is a good example of cooperation in this area.

Joint use of materials and joint course offerings

The joint use of media and materials is possible in cases where initial costs are high and for those subjects where course content can be integrated, such as Science and Technology. It is also possible to use course materials jointly for some subjects or as joint course offerings at certain levels, such as postgraduate programmes in science and technology.

USSR:
Higher Education by Correspondence in the Ukraine

V P Solianik

The Ukrainian Extramural Polytechnic Institute
USSR

HIGHER EDUCATION BY CORRESPONDENCE IN THE UKRAINE

Higher education by correspondence is very popular in the Ukraine. The main aim of correspondence education is to provide highly qualified specialists for those areas of the republic who are living far from scientific and educational centres. Every third student in the Ukraine is an external student. External students have to work at enterprises, factories, offices etc. They combine their practical skills with theoretical knowledge. This is an indispensable condition of successful education by correspondence.

Usually, it is necessary to pass the examinations to enter the institute or university. But if a candidate has special secondary education and has been working for a certain time at his future speciality and has good practical skills, he may enter the institute without examination.

The average period of study at the institute by correspondence is about six years. The first three academic years are devoted to "general education". This obligatory programme comprises mathematics, physics, mechanics, a foreign language, social sciences etc. The next three years are devoted to the special subjects. At the technical institute graduates receive an engineering degree.

The academic year usually has two or three terms. Sometimes there are more terms. For example, the academic year at the Odessa Polytechnic Institute has five terms. The academic year at the Ukrainian Extramural Polytechnic Institute is divided into two terms. At the end of each term the students come to the institute and do laboratory work, have practical classes and sit their examinations. Then they are given lectures on the material to be studied in the next term. The lectures have to help the external students to study a subject at home. Therefore, they are usually instructive lectures.

The media used at the Ukrainian Extramural Polytechnic Institute includes television, films, tape recorders and computers. At the lectures different methods of teaching are used. Among them are business games, schemes, tasks provided on student cards and a working notebook. [This probably refers to activities such as role playing and case studies - editor].

Today, training specialist extramural students is unthinkable without wide use of computers. The extramural students are trained to use computers from their first to their last year.

Initially, the students are taught to create programs in one of the algorithmic languages and to solve problems in the form of dialogue with a computer. Solving problems that are closely related to their future speciality is the most effective at this stage.

At the second stage, which usually corresponds to terms 5-8, the students develop their skills and improve their knowledge by solving problems of a general technical and engineering character. At this stage the student may receive a standard program or may construct one by themselves. The main aim at this stage is to master the processes of the future scientific and practical activity of a specialist.

At the third stage the students use different mathematical computer methods in course and diploma design. They must get acquainted with the principles of automated design systems and the automation of scientific research.

The working notebook is developed by the lecturers of the Ukrainian Extramural Polytechnic Institute and is specially recommended for external students. It is used both for lectures and for homework. The working notebook organizes, in a proper way, the student's work, shows his progress in his studies and the quantity and quality of his knowledge. Usually, the practical classes and the laboratory work of senior students are used to solve certain industrial problems. Sometimes they are part of scientific research work.

Tutorials are an important part of the instruction. There are three kinds: individual, class and regional. The last are given for the groups of students at the places where they either work or live. This kind of tutorial is very convenient for students.

Now, some words about the study manuals used at the institutes. The preparation of such manuals is very important for higher education by correspondence. The students are provided with an orderly arranged manual for every subject. A manual includes the details of the programme, recommendations concerning study, in text exercises, a list of literature and review questions.

Learning from texts is the basic form of home training. A student has to do it during a designated time.

Only when written work is done is a student eligible to take his examinations.

The individual student's work is one of the most important forms of education. There are many problems connected with the individual work of a student; among them are the problems of undertaking individual work, its planning and execution. But the analysis of scientific papers shows that the most difficult problem is the time consuming nature doing written homework.

In order to analyze students' individual work, the computer department of our institute divided the whole work into stages. The complexity of each operation was determined and the time the student spent on each operation was calculated. We analyzed the methods used in doing his homework and summed the time spent on each piece of work.

The whole time which a student spent on his homework was defined by different analytical methods. The results of this research work enabled us to prepare written work for the external students in the most rational way.

Higher education in our country is free of charge. Moreover, external students receive 30-40 days of paid leave to take their examinations and an additional four paid months is given for preparing their thesis. The Soviet state spends about 3,000 roubles for the education of each external student.

It is profitable for enterprises, factories and offices to have their workers as students because after graduating they become qualified specialists and continue to work at the same place.

For the further development of higher education by correspondence the Ukrainian Scientific Methodical Centre was constituted. The main idea of creating such a centre was to control the level of higher education by correspondence and to coordinate the teaching methods of the Ukrainian institutes. Different departments which work as a base for similar departments at the other Ukrainian institutes were organized too. They have to control and supply those departments of the Ukrainian institutes with the systematic manuals and recommendations concerning study.

The Ukrainian Scientific Methodical Centre has offered the new curricula for some specialities. There are two kinds of curricula. One is general, the other is specific to some institutes. For example, the Kiev and the Kharkov Polytechnic Institutes provide specialist curricula.

Recently, much research has been done to improve the curricula for students who have a special secondary education. Such students have studied certain special subjects at the secondary schools and continued to study them at the institutes together with students who have had a general secondary education.

Mechanical engineering students were studied. More than half of them had received a special secondary education (group N I). As a rule, they work as technicians, engineers and clerks. The students who have had a general secondary education (group N 2) are usually workers.

The group N 1 did not progress as well during the first three years as the N 2 group but did better in the later three years. During the first period, students study mathematics and physics. They need a good general education, that is why group N 2 was better initially.

It was found that the N 1 group could complete their subjects much more quickly than it was thought they could - up to 600 hours less study time. Accordingly, now the period of education of the N 1 group is four and a half years.

The Centre studies and generalizes the experience of higher education in the Soviet Union and in the other countries and organizes the discussions on methods and the conferences.

Our lecturers have close ties with many foreign institutes, such as the Dresden Polytechnic Institute and the Shanghai Polytechnic Institute, by television etc. Our scientists carry out mutual research in different countries.

The strategic course of the Communist Party and the entire Soviet people is the acceleration of the country's socio economic development. The training of highly qualified specialists in all branches of industry is one of the main factors in the implementation of this programme. It is crucial to the success of our plans.

The reconstruction of our country's economy needs reconstruction in the higher schools in the sphere of training specialists of new kinds. High qualifications and personal competence are necessary for the development of the country. Our scientific and technical progress and the improvement of our national economy depends on the development of these skills.

One of the main tasks of the reconstruction of the higher school is to develop closer ties between the different branches of industry, science and higher education. The higher

schools and industry must have mutual interests in the training of specialists. Much has already been done at our Institute in order to widen and strengthen relations between the higher schools and industry. Ten departments of our Institute have been established at different enterprises in the Kharkov region to help those who combine work with their studies. In creating such departments we charge them with two main tasks:

- To organize tutorials and laboratory work on the basis of modern equipment and technology;

- To establish closer relations with the industrial enterprises in order to carry out mutual scientific research.

These close relations provide mutual advantages. One of the new forms of such integration of industry and higher schools is an agreement between enterprise and the institute on training specialists which this enterprise needs. A plant sends its worker to get an education. The plant will pay for his education. This sum is already defined. It is about 3,000 roubles. At the end of his education the worker will present his graduating thesis, not only before the professors of the institute, but also before the main specialists of his enterprise. As a result of this, the enterprise receives a qualified specialist who knows his plant and its needs, and an employee who has obtained the necessary knowledge for the further development of it.

We believe that such an approach to the training of specialists will help us solve the problems in the reconstruction of our national economy. It will also help solve some social problems such as migration of people, housing problems and others. These are important directions for the reconstruction of the higher schools in our country.

Venezuela:
Recent Developments of Distance Education in Venezuela

Miguel Casas-Armengol

Universidad Nacional Abierta
Venezuela

Since 1975, Venezuela has had a rich variety of programmes in distance higher education (HDE), through two different schools or models:

- small scale, pertaining to distance education programmes, interested in conventional universities (CHE) and called Estudios Universitarios Supervisados (EUS);
- large scale, represented only by the Universidad Nacional Abierta (UNA), founded in 1977.

Estudios Universitarios Supervisados (EUS)

The first programmes of small scale (EUS), located in conventional universities, arose from several reasons:

- as an attempt to give new answers to the critical situation of formal/conventional national higher education;
- because of the scarce study opportunities for adult people;
- to counteract the increasing, and sometimes negative influence of some channels of the so called "informal education" (mass media, street and other non educational institutions).

Other factors that influenced the generation of these innovative programmes, were:

- the spectacular growth of social demand for higher education;
- the necessity to increase the efficiency of the "professor", a scarce and costly resource; and
- to improve the quality of the teaching/learning process.

The main undergraduate programmes of the Estudios Universitarios Supervisados (EUS) were:

- Universidad Central de Venezuela (UCV), to train pedagogues;
- Universidad Simon Bolivar (USB), whose programme named "Estudios Libres", was intended to train mathematics and physics teachers;
- Universidad del Zulia (LUZ), exclusively designated for General Studies, as a first step for all the professional long careers; and
- Universidad Simon Rodriguez (USR),as part of a mixed strategy, oriented to train pedagoges and educational administrators.

The majority of these programmes started before the formal creation of the Universidad Nacional Abierta.

Many of the distance education programmes such as those of the UCV/EUS, were originally conceived to be applied to different careers. Later they were reoriented almost exclusively toward teacher education and also, as an alternative for students who had failed in their regular face to face studies. These two characteristics did not contribute to providing academic prestige and breadth to the EUS programmes. Both characteristics partially explain the restricted development of these programmes through the eighties. The UCV/EUS programme is extended over the capital city Caracas and four other cities of the country, and it represents the largest of the EUS programmes (see table 2). As it can be examined in this table, the real average for graduation is approximately eight years and the attrition rate is quite high. Some of the other EUS programmes also went through important difficulties in the present decade. Among them, the USB/Estudios Libres, has been cancelled recently, and the LUZ/Estudios Generales, has had a substantial reduction in student numbers.

The technology utilized by these programmes has been simple, relying mainly on the printed word. Nevertheless, only in the first stage of their operation do these programmes follow some theoretical, methodological and systematic approach. Nowadays, the majority of the instructional materials for distance education are the same as those used for conventional education, without any further elaboration or adaptation for the particular conditions of distance education. The consequences are reflected in material which have serious limitations for use in auto-instruction. In trying to overcome these difficulties, EUS has added the function of the conventional lecturer to the distance tutor role and functions. The results of this complex mixture of roles has been quite unsuccessful; especially if we take into consideration that the distance tutors have only one face to face meeting of two to three hours with the students, every two weeks. Additionally, in most cases, Venezuelan undergraduate students are poorly prepared for independent studies.

Until now most of the Venezuelan EUS programmes have not been entirely satisfactory from the quantitative, qualitative and financial, points of view. Quantitatively, the student population has been small, concentrated in few parts of the national territory, and with high attrition rates. Qualitatively, the programmes have been unsatisfactory because of the low quality of the auto-instructional materials, scarce application of instructional theories, distortion of the tutorial functions, the rudimentary process of the academic control and evaluation, and finally, the low research activity relevant for distance education. Financially, the small number of students and the isolation of the diverse programmes, have been an obstacle to justify the big initial investment usually required to produce instructional materials of high quality.

Universidad Nacional Abierta (UNA)

In 1974 the new national government had the possibility of using substantial funds derived from the spectacular rise in oil prices. The government also held a majority in congress and therefore the mandate to implement laws to produce important social and educational reforms. From July 1975, arose the idea of creating, as one of the several educational innovations, the National Open University (UNA). After two years of institutional design, this University was founded in 1977. The initial document to justify this institution stated these principles:

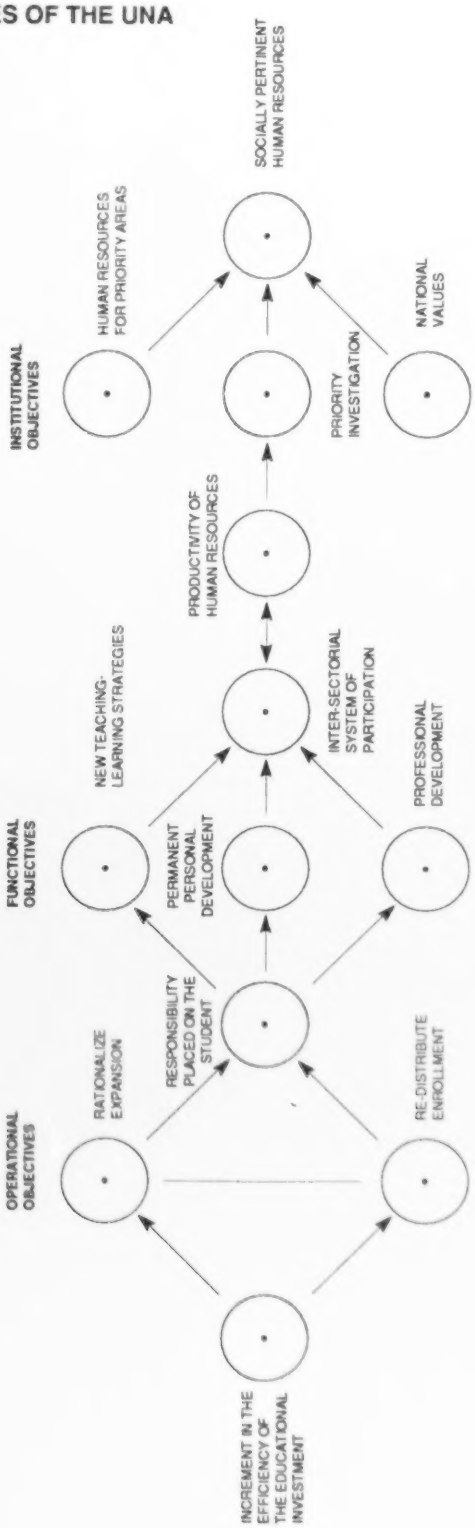
> The increasing social demand for higher education and its wide-spread dispersion has brought about the necessity of stimulating non-formal education and new systems of learning and teaching as an answer to the national expectation and as an inmediate consequence of the present educational policies. Non-formal higher education is providing a solution to the day by day increasing demand for post secondary education, in giving an answer to the urgent requirements of permanent education, and is providing opportunities to implement innovations proposed by the communication revolution and educational technology. The Venezuelan National Open University appears in the role of non- formal education as an Institution devoted to education at a distance. The UNA will be composed of various sub-systems aimed towards the optimum achievement of the Institution's goals and objectives and those of its student population. Therefore, it possesses flexible characteristics and a great capacity for self regulation, thus to insure a progressive up-grading of its activities and products. (p.33)

The ambitious initial objectives of this institution reflected, in some way, the euphoria of that period, but at the same time, showed also the perception that its planners had about the Venezuelan educational problems. Such objectives stemmed from a previous diagnosis of the national conditions; from educational policies already approved by the political sector, and from the group of principles defined for the institution. (see table 1).

TABLE 1: PRINCIPLES AND BASIC TRAITS OF THE UNA

DIAGNOSTIC ELEMENTS	EDUCATIONAL POLICIES	UNA PRINCIPLES	BASIC TRAITS OF THE UNA
Quantitative incapacity	Democratization massification of the productive use of leisure time national character	Democratization	Scope
	Optimization of the investment massification	Productivity	
Lack of qualitative change	Innovation complementary nature individualization of instruction	Educational innovation	Flexibility
	Autonomous development	Contributor to autonomous development	
Non-pertinence to objectives			Adaptability
	Complementary nature individualization of instruction		

FIGURE 1: OBJECTIVES OF THE UNA



Planning of the UNA constituted a good example of the difficulties in educational planning for underdeveloped societies. In fact, the objectives defined initially for the UNA were important and were totally justified for national development purposes. Moreover, Venezuela had appropriated intellectual and financial resources to accomplish that project, but some cultural factors and strongly ingrained traditions, impaired the normal development of the project. From the political point of view, the strong initial governmental support tended to vanish in the coming years, owing to the continuous changes in the national administration. At the same time, the institution frequently employed professionals whose main credentials were that they were members of the political parties in power. Such a trend blocked the opportunity for using some excellent and available Venezuelan academic resources. It also produced a tendency to an inefficient bureaucratization and mediocrity. Besides, the strong initial institutional policies had weak internal support and a lack of continuity, mainly because of the multiple changes of the senior executive university staff. Finally, because a substantial part of the academic personnel came from conventional universities, they produced, in many cases, some pressures to introduce in the UNA the same attitudes and procedures of their original institutions.

According to the Initial Institutional Objectives, (see figure 1), it was intended to develop, almost simultaneously, not one, but four important innovations in the Venezuelan educational environment. First, the delivery of distance instruction. Second, a new concept of curriculum design that was totally different from the traditional "study plans" which were generally passive copies from more advanced countries. Third, was the introduction of instructional design techniques, derived from recent international research. The fourth objective aspired to incorporate concepts of open education and combine them with distance education. But after some time of operation and because of the obstacles mentioned above, it became clear that it was necessary to assign different priorities to these innovations. Accordingly, the main action was to concentrate on the first innovation. The second and third innovations were modestly developed. The fourth was postponed to a distant future.

UNA initiated its activities by offering eighteen (18), professional undergraduate programmes in the areas of: basic sciences, engineering, agricultural sciences, education and social sciences. Very soon it became evident that such ambitious proposals were not possible to attain considering the limitations of the logistics and productive capacities of the institution. Furthermore, because of the advancing cohorts, the various production courses for the professional programmes had to be produced under a very rigid schedule. Through the second year of operation the Higher Council of UNA, attending to the advice of its Technical Group, reduced the eighteen programmes to nine. This diminished the initial production pressures but still it was necessary to make numerous changes in the production line, such as changing the internal responsibility of the course creation to external authors, with moderate assistance from the UNA design teams.

The student clientele intended for UNA was mainly from:

- adults who did not have study opportunities in their adolescent years;
- women, who for cultural reasons, marriage or maternity did not have the opportunity to continue their studies;
- people living in isolated locations of the country;
- blue and white collar workers.

However, the previous expectations were later modified by reality in several ways. Adults continue to constitute the main clientele with an average age of 29 years, but this average

age is being lowered. Now, one of the most important groups of students are seeking another undergraduate programme. Housewives and workers, in general, are not so numerous as it was originally expected. From these tendencies, it can be appreciated that, although the contribution of UNA to increasing access to higher education has been very important, its effective contribution to educational democratization, is still very modest.

The large scale operation of UNA is evident by examining the statistics of student enrollments. (see table 3). This table requires some explanation. The "students first enrollment" indicates only people who expressed a preliminary intention to study but they are not "regular students" until approval of the "introductory course". Therefore, the column named "general studies 1", is the one that really shows the number of "regular students". In any case, these big numbers reveal the prominent public interest toward "distance studies" of UNA, which has been substained for more than nine years. In a similar way, the EUS programmes, completion rates of undergraduate studies, requires an average of eight years. Attrition rate is also quite high, as it is in many Venezuelan universities.

The technology used by the UNA relies mainly on the printed word as a master media, but differing from EUS programmes in the sense that the UNA material goes through a more elaborate and systematic process. Nevertheless, some researchers point out that such material should be based on a more theoretical foundation and should have a systematic formative evaluation. Written material is complemented with audio visuals and some open channel T.V. transmissions (1 to 2 weekly hours). Other important support for the instructional process are the tutors and advisors, located in the twenty one (21) local centres of the UNA, distributed around the main regions of Venezuela.

Table No.2:Universidad Central de Venezuela/Estudios Universitarios Supervisados (EUS)

student and graduate numbers

Years	1975	1976	1977	1978	1979	1989	1981	1982	1983	1984	1985	1986
First Semester	709	985	767	908	1123	1429	1561	1819	1872	2600	3095	2575
Graduates								112	52	19	31	34

Table No.3: Universidad Nacional Abierta (UNA)

student and graduate numbers

Years	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
First Enrollment	17078	16556	16256	17735	21389	20323	27739	41443	33461	32008
Introductory Course	17078	11538	10594	11077	13822	9683	14595	20344		
General Studies 1	3630	2770	3015	2727	4896	5914	7524	8522		
Graduates									268	187

From the financial point of view, UNA received from the government an almost fixed budget for several years. However, the additional income produced by the institution through the sale of materials and services, has made it possible to increase its budget in successive years. In 1978, the assigned budget for UNA was Bolivares 76,131,150 (one US $ = 29 Bolivares). In the following years, the budget was close to 100 million Bs., until 1983 when it was raised to Bs.115,260,070. In 1986, it increased again to Bs.163,393,598.

To sum up, it can be concluded that in spite of its limitations, the large scale school, or model, exemplified by the UNA, still has great potential for expansion and diversification even though it has not entirely developed because the majority of its resources has been used to maintain the original nine professional programmes. Other important possibilites such as: short cycle programmes and extension, actualization and cultural courses have not been fully developed. Small scale programmes, exemplified by EUS, reveal a relative loss of importance, both in quantitative and qualitative terms, mainly due to their being placed in conventional and rigid university structures. Interrelation and collaboration among EUS programmes, and themselves with the UNA has been very weak until now.

Since 1978, UNA has participated in a Latin American Regional Programme sponsored by the Organization of American States, (OEA), to promote distance education development. This programme started only with Costa Rica and Venezuela, but now it has expanded to Colombia, Ecuador, Argentina, Chile, Peru and the Caribbean English speaking countries. This cooperation has included conferences, seminars, workshops, publications and some limited interchange of academic personal (see bibliography). However, and in spite of many positive achievements, these activities tend to be sporadic and with little possibility of producing a solid regional network to report important benefits for all the participants. Also, the Iberoamerican Association of Distance Higher Education (AIESAD), which has a strong leadership in the Spanish Distance University (UNED), is accomplishing a positive contribution through meetings, bulletins and some interchanges of professors.

SOME GENERAL CONSIDERATIONS

Through the critical analysis of the two types of distance higher education programmes in Venezuela since 1975, we have had the opportunity of visualizing some of the factors that facilitate or prevent the development of such an educational type. It is possible to state that many of the problems observed in Venezuela are quite common to other Latin American countries. Such a statement is substantiated by the results of the conferences that took place in Costa Rica, Colombia, Spain and Ecuador, and also it has been developed in my recent book Universidad sin Clases, Educacion a Distancia en America Latina. The characteristics and demands of this region make it necessary to seek new educational forms and strategies. Among them, distance education, although not a "panacea", constitute a good alternative, if some basic conditions are fulfilled. From the positive side, this new educational strategy could provide access to masses of students to higher education who find every day more difficult to achieve their educational goals because of the present economic restrictions. But to make this possible it is necessary that the subsystem of distance higher education could prove that it can offer high quality education and also become an efficient vehicle to develop scientific/technological knowledge, and moral and cultural values, pertinent to each country. This strategy represents a strong contrast with the usual function of many conventional universities of the region, which have been devoted mainly to give social status and to contribute to the reproduction of the existing social system.

Distance higher education could recruit the best academic and intellectual resources of each country and even of the region, but to accomplish that, it should promote university excellence and overcome many prejudices, myths and group interests, that impede the

rational utilization of these valuable resources. If this cannot be achieved, distance education would become only a channel for massive propagation of mediocrity and pseudo science, and a major obstacle to the appropriate development and progress of its respective societies. In another sense, distance education could also contribute to a significant reduction of university costs per student; if it faces appropriately the problems of modern organization, management and productivity, that generally are poorly considered in Latin American conventional universities. In this respect, costs could also be substantially diminished if the courses are utilized several times and by large groups of students.

If HDE is considered as a new educational technology, the organization and operation of such technology entails a complex and important problem to solve. Unfortunately, some distance universities sometimes adopt fragmented, isolated and traditional approaches, totally unsuited to the needs of a modern and productive institution. Operation of a distance university with the procedures used in a traditional university is an invitation to failure. For that reason it is necessary that designers and leaders of these new universities become up to date with the advances of modern educational technology. At the same time, they should become capable of understanding the conditions and needs of their academic and cultural environment. The answer to the consideration of these two conditions must be a "creative synthesis", appropriate to the particular social context. In general, the creation of a new distance university should be seen as a problem of introducing an important innovation and for that reason it should utilize all the procedures and strategies required to facilitate its social acceptance and consolidation.

The possibilities of the new information technologies deserve some special consideration. The proper use of this new technology is specially applicable to distance higher education because of its relatively low cost for the creation of institutional and national nets. Also, because it facilitates many of the basic operations of this type of university. The processes of induction and training of the academic and administrative university personnel can be relatively simple and fast.

In conclusion, according to the previous arguments, the importance and usefulness of a continuous and effective cooperation among the several distance universities and programmes of distance education is evident. Such desideratum is not easy to achieve in the Latin American region, due to the predominance of certain tendencies toward isolation and exaggerated autonomy in each institution and even in some of their internal university units. A clear example of this assertion is the distorted conception of the university chair or cathedra, that has constituted a tremendous obstacle for any important reform in the conventional universities. Therefore, the possibilities of creating national, regional or international nets for distance higher education would represent a complex but fundamental improvement for this new educational strategy.

References

Casas Armengol, Miguel (1987)
Universidad sin Clases. Educacion a Distancia en America Latina
Kapelusz Caracas

Casas Armengol, Miguel (1987)
"University Education at a Distance, seen as an innovative Educational Technology for Underdeveloped Countries. A Latin American View"
Paper presented to the Congress: "Higher Education and New Technologies". 5th Congress of the European Association for Research and Development in Higher Education. Utrecht. Netherlands, April 22-25, 1987.

Escontrela Mao, Ramon (1987)
"Informe que presenta la Direccion de la Escuela de Educacion al Consejo de la Facultad de Humanidades y Educacion, acerca de la situacion actual de los Estudios Universitarios Supervisados".
Facultad de Humanidades y Educacion. Caracas.

OEA/UNA/USR. (1987)
"Coloquio sobre Diseno y Evaluacion de Programas a Distancia y Coloquio sobre Diseno Instruccional". Proceedings. Caracas, as part of the OEA Project, 755.

OEA/UNA (1987)
"Curso Seminario Multinacional sobre Teecnica Automatizada de manejo de la relacion de Aprendizaje a Distancia". Proceedings. Caracas, as part of the OEA/PREDE Special Project 117. "Application and Development os Distance Ed. Systems".

Stojanovic, Lily (1987)
"Exploracion sobre la conveniencia de la utilizacion de Bases Teoricas en la Produccion Intelectual de Materiales Escritos para la Educacion Universitaria a Distanceia". Caracas. Thesis presented to the Universidad Central de Venezuela, to be promoted to the rank of "Associate Professor".

Universidad National Abierta (1986)
PROJECT. Caracas.

Universidad Nacional Abierta/Organizacion de Estados Americanos. (1982)
"Experiencias en aspectos criticos operacionales de universidades a distancia en Espana y America Latina"
2 vol. Proceedings. Caracas.
As part of the OEA Special Project 37 about Distance Education.

Current trends in Information and Documentation Work in Distance Education

Keith Harry

Open University
United Kingdom

Aims

The aims of the paper are:

1 To illustrate the current widespread recognition of the importance of work in the area of information and documentation on distance education, manifested by:

- the commitment of national and international organizations to the promotion of information and documentation work;
- the prominence accorded to information and documentation in the recently published report of the Briggs Expert Group set up by the Commonwealth Sec retariat;
- the common practice of institutions introducing distance teaching programmes to survey existing provision;
- the increase in postgraduate work on distance education.

2 To identify the reasons for this recognition:

- the proliferation of distance teaching institutions and projects;
- the improvement in the status of distance education;
- the rapidly expanding literature;
- the greater accessibility of information through new technology.

3 To point out that the importance which is universally attached to information and documentation work is not matched by the resources and funding which are actually devoted to it.

4 To describe briefly the work of the International Centre for Distance Learning and its significance for future international cooperation.

1 Widespread recognition of the importance of information and documentation work in distance education has only come about during the 1980s. It has manifested itself in a number of ways:

1.1 Commitment of national and international organizations to the promotion of information and documentation work

Newly formed national and international associations of distance teaching institutions invariably refer in their constitutions, or objectives, to the importance of the collection and dissemination of information and of the collection of literature on distance education, either as aspects of research or as separate activities in their own right. Such organizations established during the 1980s include the African Association for Distance Education, the Asian Association of Open Universities, the Canadian Association for Distance Education, the Distance Education Association of New Zealand, the European Association of Distance Teaching Universities, and the Norwegian Association for Distance Education.

Longer established organizations with commitments to support research and information collection and dissemination activities include the Australian and South Pacific External Studies Association and the International Council for Distance Education (ICDE). ICDE has provided financial support to the International Centre for Distance Learning (ICDL) for the period 1986-88 to supplement its funding.

1.2 Prominence of information and documentation in the new Commonwealth initiative

The University of the Commonwealth for Cooperation in Distance Education, whose establishment is proposed in the recently published report of the Commonwealth Secretariat appointed Expert Group under the chairmanship of Lord Briggs, will place major emphasis on information and documentation work. Amongst its aims are the promotion of credit and course transfer to extend the study opportunities of distance learning students in Commonwealth countries. The University's proposed activities include the development of computerized data bases and the collection and documentation of literature on the development of distance teaching systems. Both of these activities parallel, on a Pan Commonwealth level, the work on a worldwide level of ICDL. The Expert Group report proposes close cooperation between the University and ICDL.

1.3 Surveys of existing practice by institutions beginning to teach at a distance

It is common practice for newly established distance teaching institutions, of distance teaching institutions extending their programmes, and existing conventional institutions which are developing a distance teaching programme, to survey existing experience. This may take the form of accounts of the experience of established distance teaching institutions, the nature of existing distance taught programmes, and literature on particular aspects of distance education such as planning and management, course development, and the use of particular media and methods. Requests for information and for literature searches are frequently dealt with by ICDL.

1.4 More postgraduate work on distance education

An increasing number of postgraduate students are opting to write dissertations on aspects of distance education. The number of distance education options within postgraduate education courses is also increasing, as is the number of diploma

courses devoted specifically to distance education. As in every other academic research area, the research student embarking on a distance education related dissertation and each individual or team involved in developing a distance education option or diploma course requires to undertake a substantial preliminary bibliographical survey.

2 Reasons for the growth in recognition of the importance of information and documentation work in distance education include:

2.1 Proliferation of distance teaching institutions and projects

There has been a rapid, worldwide proliferation of distance teaching institutions and projects at all educational levels intended to alleviate many different kinds of problems. The institutions and projects both generate information and documentation and create a demand for information and documentation for their own use.

2.2 Improvement in the status of distance education

Distance education enjoys a far higher status today in many countries of the world than it did in the 1970s. This is due in large measure to the perceived success of some of the large, high profile distance teaching universities.

2.3 Rapidly expanding literature

The expansion of distance teaching and its rise in status have been paralleled by a rapidly expanding literature. The major growth area in the literature of distance education is in unpublished and semi published reports produced by national and international agencies, by government departments and official bodies, and by individual institutions. The number of specialist and regional conferences, workshops, seminars and meetings devoted wholly or partly to distance education is also increasing rapidly, with the result that conference papers are a vitally important source of information on current developments. The very small number of specialist distance education journals has recently been supplemented by the Journal of Distance Education (published by the Canadian Association for Distance Education) and the American Journal of Distance Education (from Pennsylvania State University). Many journals which are not specific to distance education, or even to education on a general level, carry articles on distance education regularly, or occasionally, a development which contributes to the difficulty of maintaining a comprehensive collection of distance education literature.

2.4 Greater accessibility of information through new technology

Developments in technolgoy have revolutionized the means of storing, accessing and transferring information. For example, the development of compact disc technology enables data base producers to provide copies of complete data bases which can be accessed in the purchaser's own institution and own time. This provides a possible alternative to on line searching of data bases, which has been possible for many years. The expansion of electronic mail facilities enables rapid informal communication between users in many different countries. Short messages can be sent on line; longer communications are more economically prepared off line. This paper was prepared off line and then sent to Deakin University via a UK Open University mainframe computer. All of the writer's arrangements for attending the International Consultation were made via electronic mail.

The implications of information providers are very considerable. The medium of electronic mail makes possible the rapid exchange of informal messages with considerably less trouble and expense than is involved in telephoning or telexing. Turn around time for enquiries can be reduced to a matter of hours instead of the days or weeks involved in using the conventional mail system. The introduction of the fax facility makes possible, in addition, the facsimile transmission of pages of text or graphics. Another relatively recent technological development, computer conferencing, raises the prospect of informal international discussion on specific topics free of time constraints. Several conferences on particular aspects of distance education already operate on the University of Guelph CoSy system in Canada.

3 Funding of information and documentation work

Many distance teaching institutions maintain collections of information and documentation on distance education, either as separate collections or, more commonly, as part of general library collections. Such institutions include Deakin University in Australia, Athabasca University and the Open Learning Institute in Canada, the Universidad Estatal a Distancia, Costa Rica, the Open Universiteit in the Netherlands, Sukhothai Thammathirat Open University, Thailand, the UK Open University (where the International Centre for Distance Learning (ICDL) is located), the Universidad Nacional Abierta, Venezuela, and the West German Fernuniversitat and Deutsches Institut fur Fernstudien an der Universitat Tubingen. The growing recognition within distance teaching institutons of the importance of the collection of distance education literative and information, however, is not in all cases reflected in the level of resources and funding made available for the purpose. Few of the distance education collections in these institutions are staffed by full time, specialist personnel, and few receive substantial funding. ICDL is fortunate in receiving United Nations University (UNU) funding with additional support from the International Council for Distance Education. The UNU is also currently investigating the feasibility of establishing regional resource centres with the principal function of creating and maintaining collections of course materials produced by distance teaching institutions within the region.

4 The International Centre for Distance Learning (ICDL)

ICDL was established in 1983 with funding from the United Nations University, in cooperation with the International Council for Distance Education and the UK Open University, on whose campus it operates. The basis of ICDL is the Open University International Documentation Centre on Distance Learning, created in 1978. ICDL is a small unit whose staff comprises an Honorary Director (Lord Perry of Walton, founding Vice Chancellor of the Open University), a Documentation Officer (Keith Harry) and an Information and Documentation Assistant (Nazira Ismail). An information service based on a document collection and an information collection is available internationally, with particular emphasis on the provision of an effective service to developing countries. Except in cases where particularly heavy demands are made on resources or on staff time, ICDL's services are free of charge.

ICDL was established to try to fill an information gap, since the existing international bibliographical services do not adequately cover the literature of distance education, and since no central information source existed to monitor the expansion of distance education worldwide at all educational levels. A single centre cannot cope adequately in the long term, however. One possible direction for future progress is a coordinated international network of designated institutions with a commitment to

information and documentation, each one specializing locally and receiving data from all the other institutions. A start has been made. At the 1985 International Council for Distance Education World Conference in Melbourne, an informal working group on bibliographic data bases was established, with members from Australia, Canada, Spain, Venezuela, West Germany and the UK. Strong expression of interest have since been received from other institutions in these countries, and from Argentina, Denmark, the Republic of Ireland, Jordan, and the Netherlands. The group agreed on a standard format to be used for computerized cataloguing of distance education literature. This format forms the basis of an extremely flexible, powerful and user friendly system which has been designed and developed for ICDL by the UK Open University Academic Computing Service and is currently being tested. It is intended that the resultant data base will be made available on compact disc in 1988, will be accessible on line, and will be capable of incorporating data generated in other institutions. The groundwork is therefore laid for a multi access, international catalogue of literature on distance education. The extended visit of the Deakin University data base and telecommunications specialist, Angela Castro, to ICDL during 1988 should ensure maximum progress in terms of access by users and by information providers outside the UK.

ICDL already possesses a computerized data base of basic information on over 500 distance teaching institutions. During 1987, the data base will be transferred to a new system which will enable searches to be undertaken much more flexibly than at present and also in more categories of information. The aim of the revised data base will be, firstly, to carry "directory" information, including the name and address of the institution, and the name of a contact person together with telephone, telex and fax numbers, and electronic mail IDs. The aim of the second type of information, including subject areas taught at a distance, media and methods used, educational level, entrance qualifications required, language of instruction, availability of course materials outside the producing institutions, and existing credit transfer arrangements, is to enable searches to be made within each category or more specifically, by combining information from separate categories.

A further area in which ICDL is likely to be involved in the short term is in the compilation of a data base of information on courses taught at a distance. There is widespread interest internationally, particularly at present in the Commonwealth and in Europe, in course and credit transfer to broaden the opportunities available to students studying at a distance. Data bases containing information on conventionally presented courses have already been developed in the UK Open University. In relation to distance taught courses, this type of data base would best be restricted initially to specific subjects and/or geographical areas, and would require renewable additional external funding.

The continuing development of high technology and the increasing involvement of international agencies in distance education should enable the compilation of data bases and the transmission of information in future to match closely the varying needs of distance teaching institutions. ICDL is fortunate in being closely linked with the UK Open University, which is in the forefront of the adaptation of technical developments for educational use. At the same time, there is a continuing commitment in ICDL to making the highest quality information available to users in those countries where high technology is not generally available at the present time.

Section IV

Developments in Distance Education: the Experience of Deakin University

Teaching and Learning as Communication: the Potentials and current applications of computer mediated communication systems for Higher Level Education

Angela S Castro

Deakin University
Australia

Abstract

Communication between students and teachers is a desirable and essential component in the learning process and computer mediated communication is considered to be particularly effective for a widely dispersed student population and should be used together with other media to offer a diversity of choices. The successful implementation of a well designed system depends on an appreciation of user needs and user training and the system championship by "facilitators". Types and size of computer mediated communication systems are considered together with the commercially available computer conferencing systems now being introduced into distance education. The information needs of the developing countries are noted and supported. The author comments on the importance to the communication research community of the findings of a forthcoming computer communication project at the UK Open University involving a large undergraduate and staff population.

Communication as a theoretical basis of education

Distance educators have a particular interest in communication because of their consciousness of the isolation of the remote learner. The heavy reliance on text as a teaching medium and the industrialized production of text, however, have, in my view, shaped the curricula and pedagogy of distance education. Communication has therefore been relegated to being predominantly associated with administrative queries, like finding out from a host institution why the instructional package has not arrived, asking whether one can defer a course because of other more pressing commitments and so forth. It is only due to the sustained efforts of scholars like Borje Holmberg and John Baath (1980), that the "teaching as communication" philosophy has been maintained.

Holmberg, for a number of years, has called on distance educators to ensure that there is an element of the "guided didactic conversation" in instructional material, a theory that has found much support from the established and practising instructional designers working in institutions with heavy investment in off campus education. He says,

> Education is based on communication between *educans* and *educandus* and, in most cases, on peer-group interaction. This communication can take the form of conversation face to face. It is my contention that even when such real conversations cannot take place it is the spirit and atmosphere of conversation that should - and largely do - characterise educational endeavours. (Holmberg in Sewart, Keegan and Holmberg 1983, p.114)

While instructional and text designers concentrate on developing material that facilitates "internalised conversation" (Lewis 1975), other educators endeavour to provide students with some conventional means of communication as an additional form of student support. (King and Foster 1985).

Here at Deakin University, we have a number of ways to ensure that some minimal contacts for the host institution and students are possible, although they are not necessarily applicable to all Deakin students or courses as Deakin allows a great deal of school and student autonomy in choosing what they want:

- A hot line with after hours recording facilities is available at the Student Centre for general enquiries. The telephone call is free of charge to the caller.
- A hotline with after hours recording facilities is available at the School of Management for students registered on the MBA (Master of Business Administration) programme.
- Students are encouraged to use the Deakin study or access centres closest to them for meeting either other students or the centre's contact person to discuss their problems.
- Students are encouraged to form local study groups and meet in each other's homes or at the local study centre.
- Telephone tutorials can be arranged for staff and students either on a one to one basis or for groups located on a maximum of ten lines by using a hired Telecom conference bridge.
- There are short face to face staff and student meetings organized and held at the University, a study centre, or a venue specially chosen for the occasion.
- All MBA students must attend one residential school per year which has a tightly scheduled social and study programme and which usually lasts about three days at a pre selected venue with accommodation facilities on site or nearby.
- The School of Management releases its lecturers from on campus teaching commitments on a semester basis to tour selected locations to meet study groups.
- University Community Service staff are available for consultation by telephone or in person to students to help with study skills, employment and personal problems.
- Deakin University Library accepts telephone enquiries and loan requests for documents.

Some of the above measures can be quite costly to implement and sustain for both the host institution and the students in terms of time and finance and yet the comprehensiveness and depth of coverage, as far as the students are concerned, are still very limited. Telephone meetings also have the constraints of time and place and their share of group size and technical problems. Study centres are difficult to equip and staff to everyone's satisfaction or needs. They are also currently too few in relation to student population, and usually too far from the student's domicile. (Castro, Livingston and Northcott 1985, Northcott and Shapcott 1986).

All the same, despite these problems caused by distance, teaching as dialogue is getting increasing support as some institutions and distance educators try to break away from the grip of text centred and teacher centred education.

Bates, speaking at a Canadian seminar, adds his voice to this philosophy:

> Humans are also social animals. People are generally happier studying when they can share their difficulties and successes with other people in similar situations. Contact with other students can be less threatening and more supportive than even a close relationship with a teacher. (Bates 1986, p.87)

Bates values communication as facilitating social interaction; and social interaction has the potential of developing into peer group learning. Mature adult learners have a lot to offer to one another in the cooperative learning situation because they are competent human beings who are capable of acting continuously to shape and reflect on the world in which they live and to think critically about the type of ideas they are given.

The challenge to distance education institutions, then, is how to provide a well designed and managed cooperative learning situation for a widely dispersed adult student body as well as for administrative and academic staff, without endless injections of funds. Institutional review of current methods and detailed costing of communications used for course development, production, delivery, staff and student support is a good first step; investigating the use of information technology as a new way of doing things better could be another. Integrating information technology into a firmly entrenched organizational infrastructure to exist side by side with other media (including print) to offer students and staff diversity in choices and options, however, might prove to be the biggest challenge to any educational institution.

The home focus of teaching and learning

Over the last few years, there has been a noticeable shift among some distance educators in Australia, the United Kingdom and Canada away from the *physical* notion of study centres to a decentralized networking model that is home based and technology facilitated. There is now a small number of identified researchers and institutions working in the three countries on the use of computer mediated communication systems (CMCS) for providing home access to learning and teaching.

The "home" notion refers to both the host institution and the student's place of learning, and is perhaps in some way a reinforcement of the established instructional design philosophy that good distance education instructional material should be able to stand on its own and be suitable for home learning. What this also means is that there is now a swing back to making more optimal use of central computing facilities at the host institution but allowing distributed and remote access from home. This "home" notion does not sit well with the current thinking of the Commonwealth Tertiary Education Commission which is in favour of getting tertiary institutions to share the use of a fixed number of regionally based study centres sited in the technical and further education colleges but is, in my view, a realistic and manageable method of providing a more personalized support for the student.

The information technology researchers in distance education have been influenced by the trials and success of a simple form of computer mediated communication system implemented at a small number of institutions. For example, in 1984, Deakin University decided to introduce computer based communication as a student support option for its ongoing Graduate Diploma of Computing programme. This programme was first taught on campus in 1977 and has been offered off campus since 1981. The off campus programme, comprising eight semester units, can be completed in a minimum of two years and a maximum of five years (Pearson 1985). Currently, it is restricted to an average intake of 100 students per year and is one of the most successful and well known programmes at Deakin. Students must have access to a microcomputer (IBM compatible) with communications

hardware and software before they can enrol in the programme. They also undertake to deposit with Deakin A$200 at the beginning of the academic year for the use of Austpac, a packet switched network operated by Telecom Australia, to dial into the University's central computer. Once their microcomputer is connected to the host computer, they can then communicate with their tutors directly, write joint essays with fellow students, submit assignments and run programs. Tutors check their mail regularly to deal with questions or messages left by their students (Castro and Stirzaker 1986).

Four features of computer mediated communication

Kaye (1987), identifies four features of computer mediated communication as being tailor made for use by students, tutors, and course developers in distance education systems: low costs, simultaneous but asynchrous transmission, storage and retrieval convenience, and ease of organizing and structuring. These features can be illustrated with examples from Deakin University.

Low costs

Once the equipment and necessary software and network facilities (microcomputer, mainframe, modem, packet assembler disassembler, leased data line, telephone, communications programs) are in place, a computing student is able to access our mainframe computer at quite low cost.

For example, if he uses a modem of 300 bps (that is sending and receiving at 300 bits per second) to submit during business hours a 6000 word essay (roughly ten A 4 sized pages, assuming 10 words per line on a 60 line page), the cost is about $2.35, based on current Austpac charges, smooth and efficient transmission conditions and skill.

Let us first calculate the amount of information sent, and then arrive at a breakdown of the cost. (Unless otherwise stated, all costs are quoted in Australian dollars in this paper).

Character count (assuming 8 characters per word) :	48,000
Bit count (8 bits per character):	384,000
Kilosegment count (1 segment is 512 bit):	0.75
Therefore time taken to send the essay is 21 minutes (384000/300=1280 seconds or 21 minutes)	
Volume charge ($1.00 per kilosegment during business hours, 50% discount in off peak hours)	$0.75
Connect time charge ($4.00 per hour)	$1.40
Call charge at local rate	$0.20
Total	$2.35

The cost can be reduced still further if the student has a faster modem (e.g. a 2400 bps one), works in off peak hours, and knows how to compress his essay (the size of any file can be reduced by about a third with a compression program), thus saving on volume charges.

Instantaneous and asynchronous transmission

The essay can be composed at leisure on the student's computer, then sent by the student and retrieved by the tutor at a time convenient to the latter. The communication is instantaneous but there is no need for someone to be waiting to "catch" it as it arrives, so to speak.

Storage and retrieval convenience

The essay will be stored in the tutor's mailbox until it is processed, that is, read, marked, filed or deleted. If it is filed, it can also be recalled easily and quickly. This convenience is not found in face to face meetings or in telephone tutorials where burdensome recording procedures must be employed before a transcript can be made.

Organizing and structuring ease

The tutor can use the power of the computer to reprocess the essay. For example, he can annotate between lines or paragraphs before returning it to the student with a grade, or he can forward it to another student to encourage dialogue between the students; or he can post it to a bulletin board for discussions by the writer or other students and staff, and in so doing, he has initiated a seminar or a tutorial session.

Convenient access to computing facilities

The above scenario depends very much on students and staff having convenient access to computing equipment. While universities are gradually working towards the ideal of a microcomputer on every staff desk (but not many have done anything about the communication or networking aspect yet), student ownership of microcomputers is a more controversial and thorny topic. In countries where education is regarded as a civic right and the user pay principle currently is not regarded as appropriate, it is quite difficult to insist that students should buy or have access to a computer system before they can be admitted to a course. Indeed, the Student Union at the UK Open University went as far as to insist that the University should bear all the costs if it considered that a home microcomputer was useful for a course. For this reason the UK Open University also provides some equipment at some of its 300 regional centres for students who can get to them. The findings of a UK Open University survey by Jones, Kirkup and Morrison (1985), however, show that students preferred the freedom and convenience of using a microcomputer at home.

It now seems that the British government has stepped in to help solve the home microcomputer issue. The Department of Trade and Industry has bulk purchased a million units of the IBM compatible Amstrad microcomputers for hire or resale to students. Some 2,500 students and 100 tutors are going to use the same system (cost under 400 pounds sterling) in 1988 for studying and teaching the OU course TD200 *Introduction to Information Technology*. In Australia, the price of computer systems has also dropped quite dramatically; one can now get a powerful IBM compatible microcomputer system with 640 K Random Access Memory (which will allow them to run big applications) for under $3,000, including communications hardware and software. The same system would have cost at least $6,000 two years ago.

At Deakin, although we have no similar stipulation about subsidizing student home computing equipment from our Student Union, most staff are cautious and genuinely concerned about the financial hardship imposed on the student if a course insists on the ownership of

a microcomputer. As a result, only some postgraduate programmes like those in business administration, health sciences, mathematics and computing science, which rely heavily on computation and analysis of data, require students to have access to, or own, a microcomputer. Students usually comply with the requirement because they can see its rationale and realise that the system will continue to be useful to them after their completion of the course. Students who experience financial hardship can usually apply to the programme coordinator for special arrangements to be made to enable them to access a system closest to them.

A technological utopia

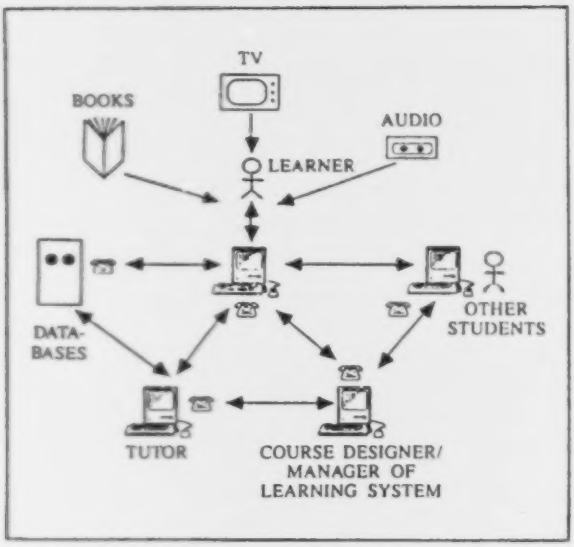
The increasing presence of microcomputers in offices and homes has given rise to many exaggerated claims of the general applications of technology. We have all heard talk of computer assisted learning, expert systems, and image and graphic transfer replacing the teacher, the decision maker, the graphic designer and the printing press. There are even suggestions of sending an entire textbook down the line, pictures, graphs and all. In my opinion, these are ill considered views based on an assumption that the end user of such technologies is an expert who is affluent enough to absorb the passed on costs of electronically delivered education. This technological utopia has not happened even for students enrolled in the so called "wealthy" American electronic universities.

Also, the truth is that while some of these wonders can now be achieved, they are still on a very small scale and are mere prototypes. For example, Telecom Australia is now testing their integrated services digital network (ISDN) which will be offered to the major business corporations probably in 1988. ISDN technology, explained in simple layman's terms and as examples, means that one single telephone line could be used for FM radio, intercom, telex, videotex, alarms, video telephones, broadcast music, recorded information, electronic directories and network connections. It could also be used to view, order and to pay for goods and groceries. The popularization of this technology, even when viewed with optimism, probably will not happen until well into the late 1990s.

What will probably happen, and has happened, is that when people have learned to use the word processing or drawing package on their IBM or Macintosh microcomputers, they will tackle the data base, spreadsheet, statistical programs. After that they will start thinking about getting connected to other machines and other users. They will continue to listen to records, audio cassettes, watch videos and television, and read books and newspapers. And that is going to remain the way people will learn or be educated for a long long time.

Kurland's brief report (1986), about the current practices of electronic universities and colleges confirms this. Bates also thinks that people will continue to use a number of media to learn, but computer communication will have an increasingly important place (see following figure from Bates 1986, p.47).

It is unlikely, however, that computer communication will replace the telephone or face to face meetings for the majority of people. One interesting way that computer communication is being used, in fact, to make other forms of communication more effective. For example, a student can first send electronic mail to his tutor to request a personal meeting or a telephone discussion of a posted paper at a certain date and time to avoid the disappointment of missing the latter. Members of AOLIN, an electronic community (network) of researchers in Australia, often meet socially and talk on the telephone after the initial introductory encounters on the network.



The potentials of computer mediated communication systems (CMCS)

Kaye (1985, 1987), suggests that certain activities are more suited to CMCS than others. Some examples could be:

- Writers and institutions developing and writing courses jointly.
- Students collaborating on projects or assignments.
- Computer conferencing or tutorials.
- Submission of assignments and return of marked assignments.
- Uploading or downloading assignment details.
- Distributing short articles to complement or supplement initial instructional material.
- Enquiring of library catalogues, reserving books or making inter library loan requests.
- Enquiring of bibliographical or other resource data bases.
- Running programs available centrally on the host computer, thus avoiding copyright and cost problems.
- Answering examination questions (especially quantitative and multiple choice types) and receiving results.
- Disseminating or completing evaluation questionnaires.
- Registration and reenrolment.
- Making administrative or academic queries.

- Mounting a course directory.
- Mounting a student directory.
- Sale of used books and equipment.
- Booking residential school places.
- Organizing and timetabling activities.
- Personal counselling.
- Publishing an electronic journal of student works...

The list does not exhaust the possibilities and potential applications of computer communication. That they do not appear to be happening to any great extent, however, even in well funded universities in the developed countries, indicates the existence of a number of problems for both staff and students associated with network access and the incorporation of computer communication into the established structure of the institution.

Kaye (1987), speaks of the challenge to institutions in integrating computer communication with existing course development and delivery infrastructure and procedures. Bates (1986, p.54), expresses a similar concern:

> The main obstacle is not so much the technology (although improvements are needed in the mainframe software) nor even the costs, but the major organizational changes that will be necessary to introduce such systems.

It is not the intention of this paper to delineate what sort of changes will be necessary as each institution is different. Instead, the rest of this paper will concentrate on a proposed strategy to introduce computer communication to the naive, or indifferent user, and to discuss briefly computer conferencing systems which are now being gradually adopted in distance education.

Apathy and resistance to computer communication

Let us return to Deakin's current use of computer communications for distance education. The Graduate Diploma of Computing has proved that computer communications can improve the speed of interaction between staff and students, but no other professional programmes at Deakin have adopted it, even though the students on those programmes are also required to have access to a microcomputer.

During a recent interview with senior academics on campus to canvass their views about using computers to develop and teach courses, it was found that only one staff member regarded computer communication as his "life line" to reaching other researchers, the rest were not interested at all. When pressed, they invariably gave one or many of the following responses:

- I am not interested.
- I prefer the present ways of communicating with my students.

- I do not have a terminal or a microcomputer on my desk.
- I have a microcomputer but I do not have the communications hardware and software.
- I am not sure if there is a budget in the programme to meet the communication costs incurred by staff and students.
- I do not understand computer communication.
- My students will not understand how to communicate electronically either.
- There is no one to teach me and my students the basics of computer communication.
- I do not know how to manage information electronically.
- I do not have time to learn.
- It is too hard.
- It is unnecessary for my current and immediate needs.

Similar responses have been recorded in other computer use surveys undertaken in a number of Australian tertiary institutions (Nightingale 1987). In general, staff from the humanities, social sciences and education disciplines seem to have less time for, or interest in, computer communication. A recently published work (Holligan 1986), describing the findings of a six month survey of British academic network usage confirms this. In Australia, there seems to be even more apathy. Most staff members find it hard to understand what computer communication can do or even what it is. It is, therefore, hard for them to place a value on the worth of CMCS, judge if it meets their needs, or how it can help them to be better teachers. On the other hand, there are some staff members from the science disciplines who, though skilled in computer communication themselves, take either the patronising view that it is too hard for their humanities colleagues ever to achieve the same competence or hold a sceptical view about the usefulness of computer communication for the "arts" people. Hence, they have not made an effort to help introduce computer communication on campus. In a way they are quite right too when they claim that collegiate training is not part of their responsibility. But whose responsibility is it? This awkward question, when raised, seldom gets a convincing or satisfactory answer.

Responses such as the above and emerging findings by Kaye (1987), Holligan (1987) and Castro (1987a), concerning the human factor in computer communication show that institutions need to reappraise their approach to user education, to introduce a more visionary policy to help make computer communication more acceptable to people's needs and in areas where it is definitely more effective than conventional communication methods. Institutions can take a top down management approach by first putting a lot of effort into designing a CMCS, and then geting people to use it; or they can give support to a small team of activists and enthusiasts and let them train the trainers who will then "spread the good word" and win converts before designing a CMCS which is more responsive to individual and task needs.

Training and educating the user

Let us first look at the training issue.

Learning about computer communication is quite unlike learning how to use a word processing or an application program; the reason being that there are more external variables involved and hence learning is more situation specific.

The basic equipment needed for computer communication comprises:

- a communication program on the local machine;
- a modem attached to the local machine;
- a telephone line or maybe even a packet radio.

Communications programs and modems are not normally packaged with a purchased microcomputer system. The market choice of these can be most bewildering and a user often runs the risk of choosing something that is unsuitable for his machine and needs or something that needs customizing or modification before it can be used. When the latter happens, the user is put in a dilemma, he does not know if it is the responsibility of the computer salesman to help him do that or the system analyst who is teaching him computer communication, or the university computer technician.

The manuals written for these communications programs and modems are usually comprehensible to only the sophisticated users - people who already know the communication jargon and have a good appreciation of the workings of computer systems. For example, how many of us know what the following terms mean: flow control, handshake, parity, stop bit, ANSI, v.22 bis, Hayes compatible, etc.?

Also, communication usually means that a user has to get his machine connected to another machine, so he needs someone to explain to him how:

- to get a user account on that machine;
- how the other machine works, even in a very general way, e.g. what keys does he use on his keyboard to correct a spelling mistake?
- to find out the user names of the people with whom he wishes to correspond.
- to make a retreat if something goes wrong while he is on the other machine.

He also needs to know how the telecommunication link between the two computers should behave, and if it is not working properly, he needs to be reassured that it is not because he has done something wrong.

The current state of telecommunications technology is not yet developed to such a degree that it is absolutely error free and transparent. However, I do not subscribe to the theory that you only introduce computer communications when it is perfect and completely transparent. A lot can be achieved even in the interim if thoughtful user training and support is provided. All new users of technology need a lot of hand holding, practice, and someone to act as a mentor and a friend as well as a trouble shooter. Questions like those listed above have no written answers in manuals. It is the institution's responsibility to train the users and to help them feel comfortable and confident about using computer communication.

User Interface, computer conferencing systems and the facilitators

The naive user can be most confused if he is asked to use a strange, remote host system before he fully understands his own local machine - this is a reason why people are reluctant to learn about CMCS. But it is possible to shield them from the macroenvironment of the remote computer through:

. Restricting them to a known set of desired activities, and

. The use of simple menus with clear choices.

For example, Deakin is contemplating the design of a simple menu driven access method on its UNIX supermini computer to get non computing staff to start using it. The computer has a tie line to a mainframe computer at Melbourne University and hence is an excellent host for a good international CMCS with its news and mail facilities to and from the major overseas networks (Castro 1987b). But for all its power and virtue, the supermini machine is not easy to use and hence is not gaining users from among staff who are not computer literate, hence some of its splendour has to be "dimmed" so as not to confuse the non computing users (Castro 1987c).

While on the issue of user interface, it might be worthwhile to bring up here the subject of computer conferencing systems. Computer conferencing systems are basically CMCS designed with the information needs of the general user in mind, hence the user interface is usually friendly and simple.

Most computer conferencing systems are based on three basic facilities. First, there is usually a text editing facility. Second, by using the text editing facility, a message or letter can be composed and sent to one or more individuals. The computer stores the message until it is processed. Third, messages may take the form of conference comments or contributions dealing with a specific topic and displayed in a chronological order.

For some time now, distance educators in Canada and the United Kingdom have been talking and writing about the use of off the shelf computer conferencing systems being mounted on institutional machines for access by distance students. (Bates 1986, Harasim 1986, Kurland 1986, Kaye 1985 and 1987). These systems have been developed along the model of EIES (Electronic Information Exchange System) designed by Murray Turoff at the New Jersey Institute of Technology back in the 1970s.

While not all computer conferencing systems have the same capabilities, and it could be argued that more powerful systems could be built on a good central institutional computer (using in particular the UNIX operating system), commercially available systems like COSY, ENVOY and PARTICIPATE which are popular in North America and now are being adopted for use in distance education are perhaps more suitable for a user population which requires ease of use rather than technological power as a first consideration.

Motivating the user

Granted that the user has been trained and an easy user interface has been implemented on a well designed CMCS, it is still possible that users will not use the system. This is the most difficult problem facing any institution that tries to introduce computer mediated communication into distance education.

There are many reasons why this could happen. Sometimes it is the personality factor. For example, a person could be shy and reserved, and if he does not write or argue well either, he will not make his presence known on a CMCS. If people do not know that he is there, no one will try to draw him out, and he can lose interest and drop out altogether.

Some people who have not understood the importance of short, efficient and regular access will allow their mail to accumulate to such a degree that they find electronic messaging a chore rather than a joy.

All new CMCS have a similar problem in that it takes time for a critical mass to build up, but many people cannot appreciate that and try to look for a lot of their kind as soon as they join a system. Their disappointment usually leads them to dismiss the CMCS as being useless or irrelevant to their needs.

Then there is the question of on line tasks. Some senior staff may think it is beneath them to type away at the keyboard. Some may feel that they have been given an unpleasant task, so they use the system reluctantly and routinely without enthusiasm. On the other hand, some people can feel bored if they have no specific task to perform while they are on line.

Some users may resent having to pay anything at all for their telecommunication charges or want to pay very little unless they are absolutely convinced that a CMCS is indispensable to their work (either teaching an off campus course or personal research).

All these attitudes, motives and actions could cause a well designed CMCS to fall down completely. To cajole, educate, stimulate and sustain the users, there needs to be a dynamic group of facilitators who are technically competent, personally enthusiastic, confident of their roles and clear about the networking objectives. They can be members of staff, the people who help train the users in the first instance, or they can be people who have emerged from among the students (which is better still). Research findings by Hiltz (1981), Kaye (1987) and Castro (1987a) have all stressed the importance of these catalysts, who may be called by a number of names: system operators, technologist activists, moderators and administrators. These people are the real teachers of CMCS. They hold the key to the success of any CMCS implemented for on campus or off campus staff and students.

Implementing a CMCS is like team teaching a distance education course. The course developer, tutors and counsellors have to be personally concerned about the students, make an effort to know them and largely share the same learning objectives. The learning outcome is less certain because the entry levels of students can be quite varied and their reactions most unpredictable. The long arm of the computer cannot win or command a silent student who refuses to show his face or speak up. All this talk about human fear of the computer is unfortunately quite true and so the attrition rate is bound to be high. Yet, for those who have become accustomed to computer communication know that in time they will be joined by more people, and that computer communication will bring a new dimension and a new tool to higher distance education.

Types and scale of computer mediated communication systems and the developing countries

So far this paper has concentrated on the use of big central computers as the host of a CMCS, but it is also possible to use a microcomputer with bulletin board software from the public domain, thus making the front end or set up costs quite reasonable (Atkinson 1986). The cost of telecommunications, however, depends also on the choice of either a public

switched telephone network (PSTN) or packet switched networks like Austpac, or even a packet radio. A CMCS designer has to bear in mind such cost and management implications for the student user who lives far away from the host institution where this microcomputer based system is implemented.

Another option is to use a public or commercial electronic messaging system. Brisbane College of Advanced Education in Queensland, for example, uses Keylink T, an electronic messaging system in Australia, to teach a Graduate Diploma of Computer Education. This option is particularly suitable for institutions which want more external interaction. For example, the Brisbane College staff and students can communicate with the staff and students of other institutions on the same system. In a developing country where institutional computer centres are not well resourced or networked but there is a need to link up a small group of dispersed staff or postgraduate students to enable quick information to be exchanged, electronic messaging systems offered by the country's telecommunications utilities could be used to set up a simple national or international CMCS.

Much has been said about the irrelevance of new technologies to developing countries. While it is true that it may be inapproriate to build a learning network using computer communication and that radio may be a more suitable medium, these countries must also be given access to scientific and technical information exchange. For example, indigenous scientists and research students in areas such as forestry, agriculture, and health sciences need to use the Western world's information data bases in those areas for the most up to date research findings. Indeed, one of the recommendations adopted in a 1981 Ottawa workshop on computer based conferencing systems for developing countries organized by the International Development Research Centre states:

> We believe that the provision of adequate and reliable CBCSs [computer based conferencing systems] to serve the scientific and technological communities nationally and within developing countries and internationally among them and with developed countries would greatly contribute to the successful development of these communities.
>
> It is our belief that unless the developing nations can participate in this electronic community of science and technology they will suffer from a disenfranchisement of a serious nature.
>
> (*Computer based conferencing systems for developing countries*, p.33)

So far, the examples quoted all tend to suggest that CMCS is better for small groups of researchers or postgraduate students numbering at the most two hundred. An interesting exception is the forthcoming CMCS project of the UK Open University relating to the TD200 *Introduction to information technology* course which is an undergraduate one and will have a 1:25 staff/student ratio. The evaluation and findings of that project will be of tremendous interest to the small but growing CMCS research community around the world, and would provide a useful reference to institutions which want to introduce CMCS into higher distance education on a major scale. I look forward to working with Tony Kaye of the UK Open University on this significant project in 1988.

References

Atkinson, R. (1986)
Computer bulletin boards for distance education students
Proceedings Ed Tech 86, International Educational Technology Conference and Exhibition
Perth, Western Australia, December.

Baath, J.A. (1980)
Postal two-way communication in correspondence education
Malmo, LiberHermods.

Bates, A.W. (1986)
Computer-assisted learning or communications: which way for information technology in distance education?
Journal of distance education
vol.1, no.1, pp.41-58.

Castro, A.S. (1987a)
A Deakin Project on computer-based communications Progress Report 1
Australia, July.

Castro, A.S. (1987b)
An introduction of major Australian and overseas computer networks Unpublished paper.

Castro, A.S. (1987c)
AESNET: Australian external studies network?
A paper delivered at Calite 87, University of Sydney, December.

Castro, A.S. and Stirzaker, L. R. (1986)
The use of Austpac at Deakin University for distance education
AOLIN, Australia.

Castro, A.S., Livingston, K.T. and Northcott, P.H. (eds) (1985)
An Australian casebook of study centres in distance education
Distance Education Unit, Deakin University, Victoria.

Computer-based conferencing systems for developing countries. Report of a workshop held in Ottawa, Canada, 26-30 October 1980
Compiled and edited by D. Balson, R. Drysdale, and B. Stanley
IDRC, Ontario.

Foster, A. and King, B. (1985)
A South Australian perspective on student support
An Australian casebook of study centres in distance education
A.S. Castro, K. T. Livingston and P.H. Northcott (eds)
pp.99-112.

Harasim, L. (1986)
Computer learning networks: educational applications of computer conferencing
Journal of distance education
vol.1, no.1, pp.59-70.

Hiltz, S.R. (1981)
Online communities: a case study of the office of the future
Ablex, Norwood, New Jersey.

Holligan, P. J. (1986)
Access to academic networks
Taylor Graham, London.

Holmberg, B. (1983)
Guided didactic conversation in distance education
Distance education: international perspectives
D. Sewart, D. Keegan and B. Holmberg (eds)
Croom Helm, London, pp.114-122.

Jones, A., Kirkup, J. and Morrison, J.(1985)
Home-based computing: a small scale study at the Open University
Open Campus
no.11, pp.83-98.

Kaye, T. (1985)
Computer-mediated communication systems for distance education. Report on a study visit to North America
September/October
Project report CCET/2
Institute of Educational Technology, Open University,
Milton Keynes, November.

Kaye, T. (1987)
Introducing computer-mediated communication into a distance education system
The Canadian journal of educational communications
vol.16, no.2 (in press).

Kurland, N.D. (1986)
Computer communications: a new tool for distance education
Distance higher education and the adult learner
G. van Enckevort et al. (eds)
Dutch Open University, Heerlen, pp.209-220.

Lewis, B. (1975)
Conversational man
Teaching at a distance
no.2, pp. 68-71.

Nightingale, P. (1987)
Microcomputers and academic work: survey of academic staff at the University of New South Wales
Research and development paper no. 66
Tertiary Education Research Centre, University of New South Wales, Kensington.

Northcott, P.H. and Shapcott, M. (1986)
The role of study centres in overall student support services in distance education, Report prepared for CTEC
Distance Education Unit, Deakin University.

Pearson, R. (1985)
Deakin University's Graduate Diploma of Computing
Open Campus,
no.10, pp.41-45.

Acknowledgement

I am indebted to Paul Northcott of Deakin University for suggesting to put my electronic mail knowledge to research use and not just messaging with computing people I already knew, to my friend Lee Stirzaker for initiating me into the mystique and protocol of computer networks, and to Paul Bacsich of the Open University for his outrageous but ultimately visionary suggestion of forming AOLIN (Australian Open Learning Information Network).

I also wish to thank my colleagues from the Computer Centre at Deakin University, the facilitators and members of AOLIN and Telecom Australia for their staunch support given most graciously in our concerted effort to promote better understanding and imaginative use of computer mediated communication in Australian institutions at all levels.

A Distance Education Database — is it wise?

Christine Crocker
Deakin University
Australia

Introduction

When institutions begin distance education courses, or continue to refine existing programmes, there is always a need for access to literature outlining similar developments, identifying the pitfalls and pleasures, easing the way. Many informal networks exist whereby colleagues exchange papers, reports and analyses. On a formal basis, information on distance education development is available through commercial data bases such as Educational Resources Information Centre (ERIC), Australian Public Affairs Information Service (APAIS), and Australian Education Index (AEI). Unfortunately, the British Education Index, with on line access for records from 1976, is only available to 1985, with no updating since then, and the Canadian Education Index, as I understand, is not available on line.

Technicalities

A data base has been defined as an organized but generally unlinked set of machine readable bibliographies or information source records which can be manipulated to obtain a variety of products for a variety of purposes.

In a machine readable data base, *records* are structured so that each one is broken into *fields* which are logically complete and discretely accessible units of information. A field is identified by a *tag* and terminated by a *field delimiter*. Fields can be broken into *subfields*. Subfields are the smallest logical elements of information in a record, and they can be retrieved, modified or otherwise accessed in a particular format. That is, all the information about a book forms a record; author, title and publishing information are given in separate fields; details like the author's first name, and the year of publication are subfields.

From an investigation of these on line data bases, it appears that the literature of distance education, educational technology and related topics is well represented. In general, documents indexed in these data base services come mainly from journals (approximately 60%); followed by published monographic items (12%); government reports and other research reports (10%); theses (2-3%); conference papers (15%); other documents including unpublished documents and ephemera, (2-3%) (Davis, 1987).

However, there is a need for access to the latest information and research on distance education that is often not published in mainstream journals or other publications, but is contained in informal reports, papers, etc. Information of this kind escapes traditional indexing services and data base selection nets. Electronic data bases are the most efficient and effective way of increasing the spread of information and knowledge and the creation of a useful data base is a real contribution to our society (Spiers, 1986:7).

Do we need a distance education data base?

Before creating a distance education data base, some basic questions should be addressed:

- who wants the information?
- why do they want it?
- what will it cost?
- what should the data base look like?
- how should materials be gathered?
- what equipment should be used?
- who will pay for maintenance?
- will document delivery be a service?
- who will benefit from the development of the data base?

What are the problems?

Any data base provider must carry out some prior market research, talking to potential users not only to determine the size of a likely market, but also to ensure that the data base under design is one that is relevant to their needs. Discrete segments of users have similar needs and characteristics, and products must be developed, packaged, and promoted specifically for each of these segments (Tenopir, 1986:68).

If we assume that, internationally, each institution involved in distance teaching would like access to a distance education data base, that provides a market of over 500 (Harry, 1987:6).

How many times will staff of those institutions want information for which they are prepared to pay? How many times will they be able to obtain it in other (often cheaper) ways?

Costs in the development of a data base will be considerable and ongoing. They include the cost of ensuring relevant material is obtained, scanned, indexed, and input. Document delivery will be a necessary feature - as Speirs (1986:16) points out, if you tell users about something they can't get, they will regard you as a nuisance instead of as a noble contributor to knowledge! Thus, material must be stored and easily accessible; loan or photocopy provision must be guaranteed. Hardware costs and staff costs will be considerable, and there are continuing costs if the data base is always to remain current, relevant and accessible.

A print version will also be essential, given the range of countries involved in distance education. Not all will have resources for on line access, so a print format of the data base, or selected portions of it, will make the information more readily available to the target audience. Printed copies may also increase revenue opportunities. Similarly, segments of data, or the entire file, could be produced in compact disc (CD-Rom) format.

Guides and promotional brochures on the data base, its content and use will need to be prepared. Newsletters for users, containing hints for successful searches, seminars and training sessions must also be a part of the provision of the data base. All these services have a significant cost.

There must be mutual agreement on the material to be included in the data base and great cooperation in supplying that material.

Are we duplicating effort?

But why couldn't this occur now? All too often this material would already be available through an on line data base if it were submitted, for example, to ERIC, the Educational Resources Information Centre.

The ERIC data base maintains a thesaurus or list of keywords or descriptors. These are essential not only for consistency in the data base itself, but also for the user's ease and success in searching for information. In Australia, we have found that the descriptors for distance education are out dated and too restrictive; the Australian and South Pacific External Studies Association (ASPESA) and the Library Association of Australia's Special Interest Group on Distance Education have recently combined forces to lobby for updated headings. Colleagues in other countries may like to join us in this. Similarly, we could lobby to ensure that publishers in the area of distance eduction submit material to ERIC, and that files in other countries, such as the British Education Index and the Canadian Education Index, are updated or made available on line.

We should pursue, too, possibilities of enhancement to existing data bases; the inclusion of more material; and the development of special products such as printed or disc formats of solely distance education materials.

What else is there?

If we combine forces to ensure existing data bases cover published literature, institutional and government reports, conference papers, theses and research projects, what other information is there? Resources could perhaps more profitably be used in maintaining the data base of information on distance learning institutions that has been developed by Keith Harry at the International Centre for Distance Learning, and making that information readily available on line, or on disc, or in print.

A data base of course materials, with information on level and format, could be invaluable to those institutions planning new distance education programmes or countries considering rationalization of courses. But is it of interest to established institutions? Would they want the information? Would they be prepared to pay for it? These questions need to be asked, and answered, before resources are dedicated to the considerable effort necessary to build up a data base of the courses offered.

On a national level, a data base of course offerings would certainly be useful to continuing and potential students, and compact disc technology would provide cheap access to the data base around the country - in schools, business and industry environments, counselling services, public libraries and community centres.

But the development of these data bases holds exactly the same problems of cooperation; provision of information; development, maintenance and storage costs; document delivery.

In conclusion

I have provided, I hope, a pragmatic and not unduly hard hearted or pessimistic overview of data base development. The costs in the development of a data base are, without question, considerable. Should we put effort and resources into duplicating that information already available on line? Would we be better off lobbying to ensure the improvement and refinement of existing data bases? Should we consider the provision of specialist data bases with information on institutions and courses? Does the demand warrant the cost? What needs to be achieved? What is the most cost effective way of getting there? What positive action could be taken?

We could persuade publishers of journals, authors of reports, organizers of conferences, people in our own institutions, to submit material to data base suppliers such as ERIC and AEI. We could lobby ERIC to ensure distance education material is included in the ERIC files. We could persuade other educational indexes to begin or maintain an on line file (e.g. British Education Index, Canadian Education Index). We could coordinate an internationally accepted set of descriptors for distance education and lobby to ensure their acceptance by ERIC and other on line hosts.

We could lobby for the provision of special products from commercial data base vendors, such as printed lists or discs, of distance education materials.

The International Council for Distance Education (ICDE) formed an informal working group on bibliographic data bases at its 1985 conference in Melbourne. The group agreed on a standard format to be used for the development of a distance education data base, maintained at the UK Open University Academic Computing Service (Harry, 1987:5-6). This effort may be duplicating results available from existing data bases. Without a guarantee of document delivery, is a separate distance education data base a wise - or viable - option?

References

1 Davis, M. (1987)
Report on the DEDATA data base options and feasibility. A consultancy report on appropriate action for developing the data base, prepared for Deakin University Library.

2 *The generation and management of small scale data bases.* Papers and discussion, Canberra: Library Association of Australia, 1982: p.5.

3 Harry, K. (1987)
Current trends in information and documentation work in distance education. Paper prepared for the unesco International Consultation on Distance Education, Deakin University, 6-11 September, 1987.

4 Speirs, N. (1986)
The search preserve us; a guide for Australian data base builders. Hawthorn: Australian data base Development Association.

5 Tenopir, C. (1986)
Why don't more people use data bases? *Library Journal* October 1st, pp.68-69.

Evaluation practice at Deakin University: the role of the Distance Education Unit and issues for further consideration

Dale Holt

Deakin University
Australia

Introduction

In 1982, Professor Fred Jevons, urged a meeting of Deakin University's course developers to organize and promote activities that would strengthen the institution as a "learning learning" system. By this the former Vice Chancellor meant that the University needed to become a system learning about its own processes for promoting learning. Kemmis (1982, p.4), noted at this meeting that "At the moment, it [the learning learning community] exists only adventitiously and ephemerally - it is not a deliberate, well- planned, systematic part of Deakin's work". Underpinning Jevons's exhortations was the strongly held belief that the University needed to catch its breath, sit back and take stock of its achievements, consolidate them, build on them and correct some of the deficiencies in its practices. The University's energies had been devoted almost exclusively in the formative years of its development to the setting up of new distance education systems, programmes and courses. Now was a time for review and redevelopment.[1] The former Vice Chancellor's message was targeted at course developers because they were seen as a useful focus for the review and redevelopment process; they were the "intelligence network" that could spread the word on the need for critical self reflection of the University's activities, and act as a clearinghouse for the dissemination of information on the diverse range of learning strategies adopted by the Schools.

Five years on, it is still uncertain to what extent the notion of Deakin as a learning learning community has become embedded in the psyche of academic and administrative staff throughout the University. One of many encouraging developments in the pursuit of this ideal was the formation of an independent and autonomous academic unit, called the Distance Education Unit (DEU), as a by product of the rationalisation of the University's distance education infrastructure in 1982 (see Castro and Holt 1985). One of the major reasons for maintaining a separate Unit was to ensure that institutionally-based evaluation studies would be undertaken, the results of which would be of benefit to the entire University's distance teaching activities. Two of the Unit's objectives which relate to the evaluation of the University's distance teaching systems, programmes and courses are as follows:

- to give advice on distance education in general, and assistance with programme and course development in particular, in the University;
- to participate in evaluation of the University's distance teaching, and to report on such studies.

It must be strongly emphasized, at the outset, that while the University sees the DEU as playing both a special and valuable role in the evaluation of the institution's systems and programmes and courses, the responsibility for such evaluation resides neither solely nor primarily within the Distance Education Unit. The Unit has a small staff: six full time academics. As a consequence, the DEU must prioritise its work, cooperate and collaborate with other sections of the University and commission external distance educators to participate in evaluative work where desirable and feasible to do so. Given these constraints, only a select number of evaluation projects can be undertaken and many courses around the University cannot be serviced given the dearth of instructional design personnel.

Furthermore, it must be acknowledged that other areas of the University (e.g. the Vice Chancellor's office, Deakin University Library, the Registrar's Division, including Student Services, Educational Services) have undertaken significant evaluation work independently of the DEU (see Jevons 1984; Winter and Cameron 1983; Mays and Winter 1985; Pritchard and Jones 1985; Edge 1987; Hill 1982), although these projects have benefited from advice solicited from staff of the Unit. Also, the academic credibility and teaching effectiveness of programmes rests squarely on the shoulders of the Schools in the University. The Distance Education Unit can only react, if invited to do so, to School initiated evaluations of the quality of their courses and programmes. The DEU cannot play a proactive role in School based evaluations.

In summing up, evaluation, as practised at Deakin, does not have a strong central focus as exists, for example, at the UK Open University which has its Institute of Educational Technology. Evaluation practice is diffuse and diverse. This makes it extremely difficult to document. Nevertheless, the DEU has been given a responsibility to evaluate selected aspects of Deakin's distance education system. It is also as well placed as any other section of the University to monitor School based evaluation practices and to involve itself in, and foster the development of, collaborative evaluation projects focusing on emerging challenges and needs within the organization. The rest of this paper examines the DEU's work in the area of evaluation at Deakin University. Issues relating to the future practice of evaluation at the University will also be briefly canvassed.

The distance education unit's role in evaluation

Since its formation in 1982, the DEU has conducted many types of evaluations:

- inter institutional and inter sectoral;
- continuing education programmes of professional bodies;
- institutional;
- school based reviews and evaluations of school programmes, both at the justification and stabilization stages of programme development within Deakin;
- individual courses.

Evaluations at the inter institutional/inter sectoral, institutional, programme and course levels have addressed issues relating to the three major subsystems constituting a distance education system, viz: course materials development, administration, and student support. Evaluation projects conducted of all these types are now outlined.

Evaluation at the inter institutional/inter sectoral level

Major initiatives undertaken at this level have included two projects; one on the role of study centres in overall student support (Northcott and Shapcott 1986) and another on assignment turn around times. (Northcott and Thompson, 1987). Both studies have been commissioned by the Standing Committee on External Studies (SCET) of the Commonwealth Tertiary Education Commission (CTEC). (The CTEC advises the Federal Government on various policy issues relating to higher education in Australia.) SCET projects must have application to cross sectoral or inter state cooperation in external studies and a capacity to establish broad principles or have a national application. While the SCET projects must have a wide orientation and not be restricted to an evaluation within any one institution, a logical starting point for the DEU project team's work has been the examination of study centres and student support services and assignment turn around systems and practices within Deakin. The results of these parts of the evaluations have been of direct benefit to the University.

There have been important interconnections between the two SCET projects undertaken by the DEU. They both broadly relate to the quality of the student support subsystem in distance education. Senior decision makers at Deakin have strongly endorsed the direction of DEU work in this area. There is a widely held belief that student support services in comparison with course materials development have been a relatively neglected area in Deakin's distance teaching operations.

Another inter institutional/inter sectoral evaluation project of significance is being conducted by Castro (1987). Castro is evaluating the technical, educational, human and cost aspects of using computer based communications through AOLIN (Australian Open Learning Information Network). AOLIN was a product of a joint proposal by Castro and Dr P. Bacsich a visiting fellow to the DEU in 1986 from the Faculty of Technology, UK Open University. The results of this evaluation will be of direct benefit to Deakin's adoption of electronic mail and computer conferencing as a means of enhancing student support services.

Castro's work has grown out of collaborative research initially undertaken by Northcott and Juler respectively during 1985 and 1986 at the UK Open University. Northcott worked with Bates on evaluating a public access viewdata system (Bates et al. 1985) and prepared an evaluation report of the applications of information technology at the Open University in the administration, operations and academic areas and documented the information technology projects in progress (Northcott 1985). Juler (1985), took part in an evaluation of a British Telecom picture development and transmission system for use in education. He also worked with a group investigating approaches to training in the British travel industry via interactive videodisc and videotex technology (Juler 1986). Internal reports were written for the UK Open University in both cases for inclusion in final group reports to the relevant bodies.

Northcott (1986) has prepared a discussion paper and draft guidelines on postgraduate studies by distance education for the Advisory Committee on Off Campus Studies, Victorian Post Secondary Education Commission. This study undertook literature searches, Australian based interviews and drew on discussions held with staff of the UK Open University during 1985. It has been circulated to certain Deans at Deakin whose Schools are either currently involved in postgraduate studies at a distance or plan to become involved in this area in the future. Further work is planned in this area.

Evaluation of professional bodies' programmes

Holt (1985b; 1986a; 1987a; 1987b; 1987c) has evaluated, on a consultancy basis, continuing professional development programmes for accountants which are being offered as part of the Australian Society of Accountants' (ASA) Professional Schedule. All aspects of these programmes have been evaluated, including their professional relevance, content, physical presentation, pedagogies, media, workload, assessment and administration.

Evaluation was only one of a range of educational services offered by the DEU, in collaboration with Deakin's School of Management, to the ASA. In addition, the ASA has contracted to use the University's production and administrative infrastructures to produce and despatch course materials and conduct examinations respectively. The evaluations have indicated that distance education has proven to be both a relevant and effective means for a private body to deliver equitably continuing professional development opportunities to its membership. Furthermore, involvement in this project has provided the University with extra scope for innovation in distance teaching practices which should be of direct benefit to future in house programme developments.

Evaluation at the institutional level

Institutional evaluations are those which are either conducted across more than one School in the University and, as a consequence, produce more generalizable results than course specific evaluations or those which relate to some central organizational function which impacts on all areas of the University. Invariably, such evaluations raise important policy issues for the organization. Work undertaken, at this level, by the DEU is summarized below under the three relevant subsystems. Something of the nature of these projects is also briefly stated.

Course materials subsystem

- Evans (1985a; 1986; 1987a), in collaboration with the University's Media Unit, conducted a survey and interviews with students about their use of audio and video cassettes. These evaluations attempted to help the development of these media in the University's distance teaching. Issues relating to problems of access, technical quality and learning effectiveness were explored.

- Castro, in collaboration with the Assistant Systems Librarian employed in the Deakin University Library, prepared a policy statement on the provision of computer support for course development and teaching (Castro and Hicks, 1987).

Administration subsystem

Rumble (1986), Planning Officer at the UK Open University, was invited by the DEU to examine activity costing in mixed mode institutions (i.e. those who teach both on campus and off campus students) based on a study of Deakin. This evaluation provides another good example of the DEU collaborating with prominent distance educators external to the institution. It also indicated the need for the University, as a whole, to embrace the findings of such evaluations once conducted or initiated by the DEU. Evaluations of the Rumble type have major ramifications for central University planning and administration. Change can only occur if recommendations are accepted and implemented by those sections of the institution responsible for the functions under review. The extent to which the DEU should be

involved in the implementation of institutional studies is a moot point. However, its time and energies are probably better devoted to the initiation of institutional studies rather than the operational implementation of policies flowing from any recommendations for improvement made.

Smith (1987), describes an evaluation he conducted on the manual method used to monitor the academic progress of undergraduate students in the School of Humanities. As a consequence of the evaluation, he designed a computer program which has the capacity to evaluate the progress of large groups of students speedily, accurately and reliably. Several Schools within the University are currently using the program and other Schools are considering its possibilities. The academic progress evaluation system is described by Smith in an accompanying paper in this book.

Student support subsystem

- Juler (1984), reported on an evaluation conducted by another DEU researcher on staff's perceptions of the worthwhileness of weekend schools.

- Grimwade (1984a; 1984b) and Shapcott (1986) evaluated the technical, administrative and educational aspects of using teletutorials as a tool for academic student support. An important ingredient of this work has been to secure the cooperation of School based academic staff in the trialling of audio teleconferencing. This has required the provision of adequate technical facilities and administrative arrangements to induce staff to use teleconferencing. In order to achieve this, the DEU has jointly initiated the establishment of a telecommunications centre (see Telecommunications Centre Brochure 1987; Telecommunications Centre Information Booklet 1987). The DEU has also accepted the responsibility for the running of the centre. Thus, in order to conduct the evaluations on teletutorials, the DEU has been required to create and maintain the necessary "laboratory". Again, it is a debatable point to what extent the DEU should continue to accept responsibility for the operational aspects of teletutorials after the initial development and evaluation work is completed. This raises an institutional policy issue of where such a facility should ultimately reside and who should be charged with the day to day running of it.

Evaluation at the School level

In 1985, a Commonwealth Tertiary Education Committee (CTEC) funded an evaluation of the School of Humanities. Evans, a DEU staff member, was appointed as one of four University and six outside members of the review group. The objectives were:

- To set the climate and framework for a series of School reviews within the University, and to encourage the development and implementation of effective longer term academic planning;

- To evaluate distinctive features of the School of Humanities common to the Schools contributing towards the off campus programme;

- To review, evaluate and recommend on all aspects of the undergraduate, postgraduate and research programmes of the School, the School's administrative and technical support, and its relationship to the University and community.

This review encouraged significant changes to the School's operation and directions (Denoon 1985; Farrall 1985). It is an example of how evaluation can be both a constructive

process in itself and identify issues and recommend developments which programme and course evaluations cannot address. Other Schools are likely to embark upon their own reviews in the near future and the DEU is likely to contribute to them.

Evaluation at the programme level

The DEU has made a useful contribution to the evaluation of various issues relating to programme justification, particularly in the area of providing advice on whether a programme can be effectively taught in the distance education mode (see Northcott and Altree-Williams 1986). This sort of advice has also been provided, on a consultancy basis, to academic faculties external to Deakin (see Cotton and Northcott 1987). In addition, the Unit has played a significant part in addressing programme justification issues relating to the University's proposed Masters in Distance Education (see Evans 1987b), a course which the DEU hopes to have a substantial role in developing and teaching. Overall, the DEU is confined to a reactive role in the programme justification area as it has little direct representation on various University committees which grant approval and resources to new programme developments.

There seems to be a dearth of large scale evaluations on the overall relevance and effectiveness of programmes at Deakin, a point discussed in more detail below. Again, the DEU can only react to School requests for assistance in the evaluation of established programmes in the post development phase. A case study of one School's efforts, at Deakin, to piece together various course specific and residential school evaluations into some overall assessment of the worthwhileness of the programme in question has been documented by Holt (1985c). The role of the DEU's staff in this process is also discussed. The approach adopted by the School is more limited in scope than that envisaged for a fully fledged evaluation of a programme's relevance and effectiveness based on the viewpoints of staff, current and past students, employers of graduates, content experts external to the institution and so on.

At a more modest level, King (1983), conducted a small scale investigation of student attrition rates within three courses in the School of Humanities.

Evaluation at the course level

As already stated, the DEU is probably in the best position to develop some overview of evaluation as practiced on specifics within the organization. DEU staff have provided educational advice to all Schools in the University, although it has been impossible to achieve the ideal of one DEU staff member per course team. DEU staff do offer general advice on evaluation strategies to all course teams in which they operate and more specifically, have immersed themselves in the conduct of some significant course evaluations. Some of these evaluations, where tangible evidence of their conduct exists (e.g. reports, published articles, discussion papers, internal memoranda etc.), are listed below:

- Castro (1983), surveyed students' views on in text questions in a School of Management course on quantitative methods.

- Winter (1984), conducted a student centred evaluation of a School of Social Sciences course entitled, "Imperialism: Clash of Cultures".

- Maclean (1984), assisted by Smith and Northcott conducted a student centred evaluation of a School of Social Sciences course entitled, "Expansion of Europe".

- Evans (1985b; 1987c) and Lockwood (1984), a visiting lecturer in educational technology from the UK Open University, were involved in an evaluation of a School of Humanities course entitled, "Images of Man". Evans conducted the student evaluation while Lockwood applied the instructional design "fine tooth comb" to selected components of the course materials. Both approaches were conducted independently of each other, but were obviously complementary in nature. The evaluation was, again, a good example of the DEU using experienced distance educators external to the University in its evaluative work. The different perspective offered by the external consultant proved illuminating for both the DEU and the School in which he worked.

- Evans (1987c), was involved in a student evaluation of a School of Education course entitled, "Curriculum Theory".

- Holt (1986b; 1987d), conducted a student evaluation of the relevance and effectiveness of a non award course developed by the Open Business School, UK Open University entitled, "The Effective Manager". This course was offered, through Deakin's School of Management, to Australian student managers. The offering of the course represented a joint venture where Deakin's School of Management provided the local ground student support while the UK Open University provided the course materials.

The above list is not intended to be exhaustive. There is no doubt that many course teams undertake systematic evaluation of their courses either in the absence of help from the DEU or as a result of general advice offered by DEU staff. In fact, in one postgraduate education course, evaluation - conceived as self reflection in a critical community of learners - is the fundamental driving force in the development of the curriculum. Here, evaluation is an integral part of the course in use, although it should be noted that the course team involved did conduct a separate summative student centred evaluation as a basis for review and redevelopment (see Evans 1987c).

However, it is fair to say that *evidence* of large scale evaluation activity is difficult to find. This perception is shared by the current Vice Chancellor, Professor Malcolm Skilbeck, in his review of the University's activities (see Appreciation Reports 1986; 1987a; 1987b). The issue of the quantity and quality of course specific evaluation will be examined in the next section. Suffice it to say that the DEU can only play a limited role in course specific evaluation undertaken at Deakin. Courses undergoing major remake rather than minor revision are more likely to attract DEU assistance in any request for help in conducting evaluation. Even then, the School concerned may need to commit some resources to the tasks of data collection, collation, tabulation, analysis and reporting.

Ultimately, the DEU would expect course teams to review and redevelop their courses automatically. This, the DEU believes, is how School based academic staff would want these responsibilities to fall. Also, the DEU is keen to ensure that any evaluation studies are made widely accessible within the University. These studies can then be used as an input into more generalizable, applied research on teaching learning at a distance.

Issues in the practice of evaluation at Deakin

The role of the DEU

The DEU, after a long period of review, became an Institute of Distance Education in 1988 with a strengthened role in the areas of teaching, research and consultancy. It now seems that the Unit will become a permanent and, hopefully, enduring feature of the University's

organizational scene and will be better resourced. The institutionalization of the Unit's role will ensure that evaluation studies proceed on the major issues and challenges which confront Deakin's distance education system. However, the Institute will still need to cooperate and collaborate closely with all areas of the University and distance educators external to the organization on the conduct and implementation of large scale evaluation projects. In addition, the Institute will be eager to respond to requests for help from Schools in their quest to evaluate systematically the overall worthwhileness of their programmes.

A critical factor in the success of the Institute will be the role played by the Board of Distance Education which will oversee its operations. The Board will comprise a representative group of senior academic and administrative staff from within and outside the University. The Board should provide valuable guidance to the Institute on those aspects of Deakin's distance education system which require evaluation as well as an important channel of communication to feed back the results of evaluation work conducted on all areas of the institution. It is absolutely crucial that the Board has political clout; that is, it has access to, and power within, senior decision making circles in the organization. The Institute, by itself, and in the absence of a Board strategically placed to influence University policy as it relates to distance teaching, will struggle to make a significant impact on organizational practices. Evaluation studies may proceed, but the implementation of any significant findings will probably not occur without this administrative support.

Thus, the role of the Institute of Distance Education at Deakin will continue to be somewhat analogous to that of a library facility. It will be a repository of distance education expertise drawn from across the University and, in turn, will be able to be drawn upon by all sections of the institution. It will continue to alert the University to current challenges and debates in distance education through strategically chosen channels (e.g. the Board of Distance Education). However, the responsibility for ensuring that this information is circulated widely must rest with the Schools, a topic to which this paper now turns.

The role of the Schools

Ultimately, it is what happens within Schools that will determine whether good evaluation practices flourish or flounder. Senior decision makers in Schools should ensure that ideas on good evaluation practice are circulated and taken up by staff within their domain of responsibility. Anecdotal evidence suggests that there is potential for improvement in evaluation practice in the Schools, although it could be reasonably argued that such a proposition of itself requires further systematic investigation. The apparent paucity of course specific evaluation would seem to represent the "soft underbelly" of evaluation practice at the University.

How can senior decision makers in Schools improve evaluation practice? First, a philosophy, a set of attitudes, beliefs and shared values - that is, an organizational culture - conducive to creative and imaginative peer group review of learning materials and teaching practices needs to be strengthened further by the schools themselves. The most obvious manifestation of such peer group interaction has traditionally been the course team. But is the rhetoric of course team operation matching the reality? Some would argue that it is not. A renewed and vigorous commitment to peer group review of course materials by Schools for the benefit of their staff, particularly new inexperienced staff members, would provide a fillip to the formative evaluation process.

This leads to a second point on the practice and efficacy of summative evaluation. To what extent are staff regularly and systematically seeking feedback on their courses from subject specialists external to the University and, most importantly, from students? To

what extent are Schools attempting to assess the overall worthwhileness of their programmes? Are our postgraduate professional development programmes providing students with the knowledge, skills and attitudes required for them to perform well in the workplace? The conduct of summative student centred evaluations of courses could probably be described as "uneven" across the University. It seems that too much redevelopment of course materials is based on selective personal experience, anecdotal impressions, intuition and opinion; that is, "data free" evaluation. There is no doubt that anecdotal information gathered informally and unsystematically during the course maintenance phase can provide teaching staff with some indication as to whether or not their courses are being favourably received, in very general terms, by students. However, such information does not provide a precise or discriminating basis for making informed professional decisions on course improvements.

In addition, where systematic evaluation does take place, there is not necessarily a whole hearted commitment to "lay the table bare" and follow through on all relevant findings. Evaluation demands a commitment to implementing and monitoring desirable changes and this is dependent on open, positive attitudes which see all aspects of a course as being negotiable. If certain aspects of a course are not negotiable, this should be made clear before resources are committed to a full scale evaluation. Evaluation strategies can then be targeted at those areas where change can reasonably proceed if found to be nesessary. Unfortunately, the lack of purposeful student centred evaluation often means "throwing good money after bad" in the redevelopment of courses and programmes. Evaluation needs to be seen as a long term investment where the up front costs in staff time and resources can be high, but where the ultimate benefits to be gained in minimizing the need to restructure course materials radically or strengthen student support services to correct course deficiencies can far outweigh the initial sacrifices involved.

If the practice of evaluation at the course level can be described as "uneven" then programme evaluations of a longitudinal nature could be said to be non existent. The University just does not know what many of its graduates think about the overall relevance and effectiveness of its programme offerings, particularly those programmes which purport to improve professional effectiveness.

It is opportune to note that the CTEC has recommended, inter alia, that institutions should "introduce a system of regular assessments of performance for individual academics to review achievements in the immediate past and determine areas of activity and objectives in the near future" (CTEC Committee of Enquiry 1986, Recommendation 19(i), p.24). Deakin is actively considering the introduction of a formal academic staff performance appraisal system. It is assumed that such a system for tenured academic staff will require them to submit evidence regularly of distance teaching effectiveness. (As an aside, perhaps there is a need to identify, define and document more clearly what attitudes, knowledge, skills and abilities constitute a competent distance teacher?) Thus, for example, student evaluations could no longer be considered a desirable but optional activity for the purposes of meeting the requirements of a formalized academic staff appraisal system. Evidence would be required based on purposeful evaluations which are properly conceived and conducted. Again, it is assumed that such evidence is already required to be submitted by those staff who are either seeking promotion based primarily on meeting the criterion of outstanding teaching or who are working toward the achievement of tenure criteria in their probationary period.

It does seem that some staff do see formative and summative evaluation as a peripheral activity to their distance teaching. However, the low priority attached to evaluation may be caused by other more immediate pressures that confront busy staff (e.g. pressure to meet production deadlines, assignment marking and so on.) In addition, the conduct of evalu-

ations can be, as already mentioned, a time consuming business. A formal academic staff performance appraisal system may provide the major breakthrough in thinking required to promote the task of evaluation to the role of central importance it deserves in the distance teaching learning process. The University would need to ensure that any such system was adequately resourced so that staff would be given a fair opportunity to provide the sort of evidence needed to substantiate their teaching effectiveness.

Confidentiality versus public disclosure of evaluation findings

A final issue which affects the practice of evaluation relates to the problem of confidentiality versus public disclosure of evaluation findings. This dilemma has confronted much of the evaluation work undertaken by staff of the Distance Education Unit, both within Australia and overseas, particularly the evaluations conducted for external professional and commercial bodies. A rich amount of information on course pedagogies and the use of media is locked up in these reports. The desire to make this information available to a broader audience is difficult to reconcile with the professional obligation of client confidentiality. Distance Education Unit staff have attempted to address this problem by at least disseminating evaluation reports of limited confidentiality amongst themselves while material that is not confidential is held in the DEU's Resource Collection which makes it more accessible to staff external to the Unit.

The disclosure versus confidentiality dilemma also plagues a great deal of evaluation work done within the University's Schools and course teams. The results of course evaluations become the property of course teams, the members of which are often reluctant to make the findings more accessible to staff outside the team, let alone external to the School!

CONCLUSION

Overall, much work needs to be done to strengthen the role of evaluation at Deakin, although much has been achieved by all sections of the University. It would seem that the responsibility for improving the University as a distance teaching institution resides with all staff, whether they be academic or administrative, in all sections and at all levels of the organization. A diversity and richness of evaluation practice must be developed and accommodated within the University. It should be fostered by Schools through the Schools themselves assessing the best ways of reviewing and redeveloping their own courses and programmes. Schools should accept the responsibility for getting their organizational cultures right so that sound evaluation of achievements can proceed. Importantly, Schools must socialize inexperienced staff into a culture which prizes peer group review and systematic student centred evaluation. An integral part of this task is to offer incentives for teaching excellence. However, a strong organizational culture will reduce the need for a School to rely overwhelmingly on extrinsic rewards to motivate staff to embrace sound evaluation practices compared with one that has only a weak culture.

In summing up, Schools should attempt to develop an overall set of coherent principles to guide their evaluation practices and support these with a strong organizational culture which will ensure their successful implementation. Evaluation should be seen as a "critical success factor" in the development of quality distance education programmes.

Schools should also be responsive to issues raised by University wide evaluations. Cross fertilization of evaluation practices between Schools would be an added bonus. The DEU has a useful role to play in this area. The employment of both "top down" and "bottom up" initiatives to improve the evaluative process (i.e. where change comes from individuals,

course teams and schools as well as being initiated by central decision making bodies) may move the whole University a step further towards the Jevons' ideal of a learning learning community.

Acknowledgement

While the author would like to thank DEU staff for their helpful comments on a draft version of this paper, I stress that the views expressed are personal ones which do not represent official DEU policy on evaluation nor do they necessarily accurately reflect individual DEU staff members' views on the issues examined.

Notes

[1]Jevons prefers the term "review and redevelopment" rather than the more pejorative term "evaluation". The proper definition, scope and methods that evaluation practice should embrace is a contentious issue (Holt 1985a). It is also difficult to ascertain when evaluation stops and applied research begins. Bates (1981) has attempted to reconcile evaluation and applied research by coining the term "evaluative research". Evaluative research aims to improve decision making while adhering to the accepted standards of research (e.g. accuracy, reliability, discrimination, understanding, practicality, development of theory, timeliness). Evaluative research can be described as "decision-linked research strategies" (Bates 1981, p.30). This paper will, for the most part, stick with evaluation as it is the most commonly used term in the studies quoted. It must be acknowledged, however, that evaluation is liberally interpreted to cover a range of investigations and methods of inquiry.

References

Appreciation 1986 (1986)
First Report: The Yellow Book
Deakin University, August, pp.1-175.

Appreciation 1986 (1987a)
Second Report: The Green Book
Deakin University, February, pp.1-191.

Appreciation 1986 (1987b)
Action Report: The White Book
Deakin University, April, pp.1-41.

Bates, A.W., Knox, P. and Northcott, P.H. (1985)
Milton Skreens Market Research Evaluation
A private and confidential report prepared for the Milton Skreens Consortium
The Open University, Milton Keynes.

Bates A.W. (1981)
Towards a Better Research Framework for Evaluating the Effectiveness of Educational Media
IET Paper on Broadcasting no.172
Institute of Educational Technology, Open University,
Milton Keynes, pp.1-34.

Castro, A. (1983)
Evaluation of MBA 891 Quantitative Management Methods
Unpublished Report, Distance Education Unit, Deakin University.

Castro, A and Holt, D.M. (1985)
"An introduction of the Open Campus Program at Deakin University"
ICDE Bulletin, vol.9, September, pp.13-24.

Castro, A. and Hicks, C. (1987)
A Policy Statement on Provision of Computer Support for Course-Development and Teaching
Unpublished Paper, Distance Education Unit,
15 June, pp.1-7.

Castro, A. (1987)
A Deakin Project on Computer-Based Communications.
Progress Report 1, Distance Education Unit, Deakin University, June, pp.1- 34 plus Appendices 1-4.

Commonwealth Tertiary Education Commission (1986)
Review of efficiency and effectiveness in higher education
Report of the Committee of Enquiry, September, AGPS, Canberra.

Cotton, G.B. and Northcott, P.H. (1987)
Laurentian University's Master of Business Administration Programme by Distance Education
Proposal prepared for the Selection Committee for the Northern Distance Education Fund, Ministry of Colleges and Universities, Government of Ontario, Canada.

Denoon, D. (1985)
Report of the Review of the School of Humanities, Deakin University
Commonwealth Tertiary Education Commission Evaluations and Investigations Program, November, pp.1-18 plus Appendices 1-11 and Statistical Appendix.

Edge, D. (1987)
Discontinuance of Off Campus Students in Undergraduate Programs
Internal Memorandum, 17 February, pp.1-5.

Evans, T.D. (1985a)
A Report on a Survey of Deakin University Off-Campus Students' Audio- Cassette and Video-Cassette Use
A Survey Developed and Conducted by a Distance Education Unit and Media Working Group comprising:
Terry Bennett, Terry Evans and Peter Lane, July,
pp.1-15.

Evans, T.D. (1985b)
"Just another brick in the wall: Some reflections on student-based evaluation in distance education"
Open Campus, no.11, pp.51-68.

Evans, T.D. (1986)
A Report on Interviews with Deakin University
Off-Campus Students about the Use of Audio-Cassettes and Video-Cassettes in their Studies
A follow-up study of respondents to a survey developed and conducted by a Distance Education Unit and Media Working Group comprising: Terry Bennett, Terry Evans and Peter Lane, July, pp.1-14.

Evans, T.D. (1987a)
"Audio cassettes and video cassettes in distance teaching: some findings from a survey and interviews with off-campus students about their access to equipment and perceptions of audio and video course materials"
A paper presented to the 56th ANZAAS Congress, Massey University, Palmerston North, New Zealand, January, pp.1-6.

Evans, T.D. (1987b)
A discussion paper on a structure for a Deakin University Master of Distance Education degree
Prepared for the Committee on Distance Education subcommittee on the Master of Distance Education (MDEd) Programme, June, pp.1-9.

Evans, T.D. (1987c)
"Distance students" strategies: A comparison of the strategies used by undergraduate humanities students and postgraduate education students to complete their courses'
in A.H. Miller and G. Sachse-Akerlind (eds)
Research and Development in Higher Education, vol.9, HERDSA, Sydney, pp.503-12.

Farrall, L. (1985)
Review of the School of Humanities of Deakin University Commonwealth Tertiary Education Commission Evaluations and Investigations Program, Deakin University, Geelong, December, pp.1-16.

Grimwade, J.R. (1984a)
"A teletutorial trial at Deakin University"
Open Campus, no.9, pp.26-44.

Grimwade, J.R. (1984b)
"Issues in teletutoring"
Open Campus, no.9, pp.45-62.

Hill, C. (1982)
Master of Business Administration (MBA) Questionnaire on graphic design aspects of study guides and the use of learning aids (objectives, in-text questions, review questions).

Holt, D.M. (1985a)
"Theoretical models of evaluation"
Open Campus, no.11, July, pp.3-20.

Holt, D.M. (1985b)
Final Evaluation Report on The Australian Society of Accountants' Associate Programme
Distance Education Unit, Deakin University, September, pp.1-61 plus Appendix B.

Holt, D.M. (1985c)
"Critical issues in evaluating learning material"
Open Campus, no.11, July, pp.21-50.

Holt, D.M. (1986a)
First Semester Evaluation Report on the Australian Society of Accountants' Associate Programme
Distance Education Unit, Deakin University, September, pp.1-70 plus Appendix B.

Holt, D.M. (1986b)
Evaluation of the Residential School
Open Management Courses, MCP 670 The Effective Manager,
Unpublished Paper, Distance Education Unit, Deakin University, November, pp.1-29.

Holt, D.M. (1987a)
Second Semester 1986 Evaluation Report on the Australian Society of Accountants' Associate Programme
Unpublished Paper, Distance Education Unit, Deakin University, March, pp.1-60 plus Appendix C.

Holt, D.M. (1987b)
1986 Evaluation Report on the Australian Society of Accountants' Distance Learning component of the Public Practice Programme
Unpublished Paper, Distance Education Unit, Deakin University, April, pp.1-48 plus Appendix B.

Holt, D.M. (1987c)
Evaluation Report on The Australian Society of Accountants' Residential School Component of the Public Practice Programme
Unpublished Paper, Distance Education Unit, Deakin University, April, pp.1-27.

Holt, D.M. (1987d)
1986 Evaluation Report on the Open University (UK)
MCP 670 Effective Manager course, Distance Education Unit, Deakin University, April, pp.1-31.

Jevons, F. (1984)
"The grip of print: Can we break it?"
Discussion Paper, Queenscliff Retreat,
February, pp.1-6.

Juler, P.A. (1984)
Weekend School Evaluation Report
Distance Education Unit, Deakin University, November, pp.1-13 plus Appendices 1-3.

Juler, P.A. (1985)
Summary of interviews conducted in Scotland in connection with the Open University evaluation of the British Telecom Sketchmode system of picture transmission
The Open University, Milton Keynes, November 6.

Juler, P.A. (1986)
Interim Report of the Joint Association of British Travel Agents (ABTA)
Manpower Services Commission (MSC)
Open University (OU) and Council for Educational Technology (CET)
Feasibility Study on Interactive Video Training in the Travel Industry
The Open University, Milton Keynes, January 29.

Kemmis, S. (1982)
"Organising for course review and redevelopment"
Notes for discussion among course developers,
October 26, pp.1-6.

King, B. (1983)
A Report on the Student Attrition Rate of selected courses of the 1981 off-campus student intake
Distance Education Unit, Deakin University, August, pp.1-73.

Lockwood, F. (1984)
Comments on weeks one and two of Images of Man
Internal Memorandum, September 18, pp.1-14.

Maclean, P. (1984)
Evaluation: Expansion of Europe
Unpublished Report, pp.1-18.

Mays, T. and Winter, A. (1985)
A Library Loan Hotline
An investigation into costs and user acceptance of a telephone service for catalogue inquiry by distance students
Deakin University, Geelong, pp.1-52 plus Appendices 1-6.

Northcott, P.H. (1985)
Information Technology at the Open University
Internal Report, Institute of Educational Technology, The Open University, Milton Keynes.

Northcott, P.H. (1986)
Masters programmes offered off-campus: A draft position paper
Advisory Committee On Off Campus Studies, Victorian Post Secondary Education Commission, pp.1-8.

Northcott, P.H. and Shapcott, M. (1986)
The role of study centres in overall student support services in distance education
Final Report prepared for the External Studies Standing Committee of the CTEC, Distance Education Unit, Deakin University, August, pp.1-102.

Northcott, P.H. and Altree-Williams, S. (1986)
Development of the Off-Campus Graduate Diploma of Occupational Hygiene
Discussion and planning paper prepared for the Development Group of Worksafe Australia, Deakin University, pp.1-83.

Northcott, P.H. and Thompson, D.J. (1987)
Assignment turn around time: what should be expected? How can it be achieved?
Final Report prepared for the External Studies Standing Committee of the CTEC,
Distance Education Unit, Deakin University, December, pp.1-87.

Pritchard, A.L. and Jones, D.R. (1985)
Evaluative Study of Cross-Crediting Arrangements Between Distance Education Institutions
Commonwealth Tertiary Education Commission Evaluations and Investigations Program,
Deakin University, Geelong, pp.1-20 plus Appendices A-D.

Rumble, G. (1986)
Activity costing in mixed-mode institutions: A report based on a study of Deakin University
Deakin Open Education Monograph No.2, Distance Education Unit, Deakin University,
pp.1-67.

Shapcott, M. (1987)
"Slow and steady wins the race"
A Report of a project to investigate the use of Teletutorials at Deakin University and to develop promotional material on the Telecommunications Centre, Distance Education Unit,
Deakin University, March, pp.1-16.

Smith, L. (1987)
"Monitoring student progress"
Paper prepared for the UNESCO meeting on Higher Distance Education held at Deakin
University, Geelong, Australia, 6-11 September.

Telecommunications Centre Brochure (1987)
Distance Education Unit, Deakin University.

Telecommunications Centre Information Booklet (1987)
Distance Education Unit, Deakin University.

Winter, A. and Cameron, M. (1983)
External Students and their Libraries
An investigation into student needs for reference material, the sources they use, and the effects of the external system within which they study
Deakin University, Geelong, pp.1-92 plus Appendices 1-4.

Winter, A. (1984)
A Survey of Student Responses to the Clash of Cultures course in 1983
Unpublished Report, Distance Education Unit, Deakin University, April, pp.1-32 plus Appendices 1-1V.

University continuing education by Distance Education An Australian viewpiont

Philip Juler

Deakin University
Australia

Abstract

The history, such as it is, of university continuing education in Australia and overseas reveals singular deficiencies in the areas of theory and policy. Despite widespread demand for continuing education, the practice is piecemeal and apart from some use of radio, it is usually offered only on a face to face basis. Recent moves to establish a national policy for continuing education in Australia would stand a better chance of success if there were a stronger theoretical base and a greater commitment to leadership in this area from some universities. The distance teaching universities seem to be those best fitted for this role and for meeting the growing demand for continuing education across the country.

Historical background

To attempt a coherent account of the history of continuing education in Australia is a daunting task. As Brian Smith puts it:

> Not only is it virtually impossible to quantify Continuing Education in any realistic way other than by the amount of time and effort put into it by the people who do the organising and teaching, it is also extremely difficult to categorise it in any way which would fit fairly with the different policies and practices of the various institutions. (Smith, B., 1984, p.89).

It is interesting to compare this kaleidoscopic view of the Australian experience with reports from Europe and North America. The picture that emerges is remarkably uniform. For example, Colin Titmus, who is Dean of Adult and Community Studies at the University of London Goldsmith's College and, amongst other things, chief editor of the Unesco terminology of adult education, says that:

> British universities have been engaged in liberal education for over a century and were largely responsible for establishing the concept. It has not prevented them from engaging, in a piecemeal and empirical fashion, in other forms of continuing education, but it may have hindered the formulation of a coherent policy in the field (Titmus, 1985, p.2).

Likewise, Gordon Selman of the Department of Adult Education, University of British Columbia, refers to '...a field which Malcolm Knowles has described as a "patternless mosaic of pluralistic aims"... (Selman, 1985, p.84).

What the historical record does provide is a considerable amount of largely anecdotal evidence about theory, policy and practice which shows that university continuing education has, from the outset, been shaped by a wide variety of haphazard circumstances. Although the same may be said of most other educational enterprises to some extent, in this particular case it is so much so that the only common principle discernible in Australia and elsewhere seems to be expediency. This is not so much to criticize what has been done so far as to question whether it is a satisfactory basis on which to continue.

Some of the more salient points which may be derived from a study of theory, policy and practice in Australian continuing education - with some reference to the situation in other countries - are as follows:

Theory

- There is a need for the terminology to be clarified as a foundation for any national policy which may be developed because there are, at present, widely divergent opinions on matters of definition. For example, some would define continuing education as embracing only non award courses while others distinguish between award and non award continuing education.

- While there is greater acceptance of the legitimacy of university continuing education than there was ten years ago (Smith, B., 1984, p.103), there is still insufficient theoretical and scholarly study to justify calling it a discipline in its own right. It is considered to be essentially a matter of policy and administration.

- Australian universities, as a whole, in comparison with other sectors such as technical and further education (TAFE), cannot be said to "take the leading role in shaping and developing general Continuing Education provision ..." (Smith, B., 1984, p.115). Smith goes on to suggest that they can, and in some cases do, play an important part in the theoretical study of the area. However, the more recent view of Johnson and Hinton is that "The professional preparation of adult educators and the scholarly study of the field are both patchy, with the second a good deal more neglected than the first." (Johnson and Hinton, 1986, p.27). In support of this assertion they cite the response of the Victorian Council of Adult Education: "Even universities with major schools of education direct no attention to adult learning as such." (Johnson and Hinton, 1986, p.28), but this ignores the contributions of various centres, departments or units specializing in continuing education, distance education, or both.

Policy

- Despite there being in Australia's universities "... no assent whatsoever to a suggestion that there might be a `norm' for university continuing education provision ..." (Smith, B., 1984, p 89), the Johnson and Hinton Report proposes, somewhat bravely, that the Australian Education Council (AEC) "... I should consider in what way national policies and a national approach to the provision of adult and continuing education can be cooperatively devised." (Johnson and Hinton, 1986, p.46)

- Reorganization of continuing education programmes in Australian universities has been for economic, not educational reasons. In other words they are "commendable

but expendable", (Johnson and Hinton, 1986, p.9). This sort of description is apparently equally applicable to the Canadian situation with the result that:

> Marketing in volume to a circumscribed section of the public takes precedence over the community education function of facilitating the application of university resources to major issues, including peace and war, that affect all sections of the public (Roberts, 1985, p.93).

- No Australian university appears to have adopted, as a policy, the provision of continuing education, construed as further education or professional upgrading, to its own graduates. Brian Smith concludes:

> ... I think ... it would be a gross exaggeration to claim that the universities do, in any general and comprehensive way, provide on- going education, even at the "educational-contact" level, which is a deliberate servicing of the graduate community. (Smith, B., 1984, p.109).

Practice

- Many people in all parts of the country want a wide variety of types of education in a broad range of subject areas.
- Most universities and individual academic staff have some interest in providing such education, though mainly as casual extras and to some extent tinged with a sense of inferiority.

- There has been a long standing use by non distance education institutions of some distance education methods, especially radio, which are not used widely by the major distance education providers. This is almost certainly a question of what is perceived as having "educational effectiveness and cost benefit". (Northcott, 1987.)

There are many other matters which are relevant to continuing education in general but these have been selected as being of particular importance to the distance education universities.

What of the future?

It is, perhaps, utopian to suggest that theory should inform policy so that policy can shape good practice when there is already a lot of good continuing education happening with little policy and less theory. However, if there is to be any reconciliation between current practice, based on the highly individual and piecemeal approaches of the past, and the perfectly reasonable attempt to set national goals for the future; it is vital to establish as strong a theoretical base as possible. This would facilitate the framing of a coherent policy which might very well embrace much of what is already done, with little or no discomfort, and would also reveal any deficiencies and perhaps how to rectify them. It is important in doing this that universities should learn from the experience of other educational sectors, such as TAFE (Technical and Further Education). Colin Titmus expressed similar ideas in the British context when he said:

> In order to be true to itself higher education's choices should be informed by empirical research and critical reflection upon experience. In the world of continuing education as a whole a certain amount of both has been undertaken and has proved of value in practice. Less attention has so far been devoted to applying the results to

> continuing education in higher education, or to studying that area's specific problems. It is significant how much the present authors have drawn on evidence from continuing education outside higher education rather than within it (Titmus, 1985, p.4).

Theory: a matter of definition

Michael Richardson, the UK Open University's Pro Vice Chancellor (Continuing Education), in reviewing questions of definition pointed out that in 1981, a British Department of Education and Science working party:

> ... concluded that there should be no specific mention of continuing and adult education in any legislation. It took this view because "both terms are imprecise and we do not believe that widely acceptable definitions can be found." (Richardson, 1985, p.74).

He continued to illustrate the problem of defining continuing education by quoting the Unesco definition which, he said, "... describes a process and does not easily translate into an institutional basis for policy:"

> ... the entire body of educational processes whatever the content level and method, whether formal or otherwise, whether they prolong or replace initial education in schools, colleges and universities as well as in apprenticeship, whereby persons regarded as adult by the society to which they belong develop their abilities, enrich their knowledge, improve their technical or professional qualifications or turn them in a new direction and bring about changes in their attitudes or behaviour in the twofold perspective of full personal development and participation in balanced and independent social economic and cultural development (Richardson, 1985, p.74).

In other words, and briefer: Continuing education is all education which cannot be classed as "initial"! It almost seems that Unesco wanted to embrace in its definition everything that is done in the name of continuing education anywhere in its member countries.
Richardson, in my view, is too generous in his comment quoted above: it is not a process but a miscellany of current practices, which is why it "does not easily translate into an institutional basis for policy". It would be a major contribution to study and debate if there were agreement about definitions, at least in the literature but preferably also in institutional policy and practice. One way forward is to begin with the concept of "recurrent education", a term which:

> ... received prominence with the clarifying report of the OECD (1973) [and which has been] resurrected by the ANU [Australian National University], Centre for Continuing Education (CCE) in its Recurrent Education Program, because of the belief that it is even more relevant in today's troubled circumstances than it was in the optimistic conditions when it was first fashioned (Smith, B.W., 1987, p.6).

Barry Smith quotes at some length from the Statement of Intent of the CCE in describing what continuing education is and what it is not. In this latter connection he says:

> "Recurrent Education" is not another term for continuing education, professional updating or adult education, nor is it simply a category of provision. ... It ... extends to all phases of education, before and after the compulsory school leaving age, includes education in the workplaces and the community, and encompasses a wide range of policy matters (Smith, B. W., 1987, p.7).

Recurrent education is, in fact, a term which implies viewing the entire field of education as a continuum, where continuum is defined as a "thing whose structure is continuous not discrete" (OED) or as, "something in which a common character is discernible amid a series of insensible or indefinite variations" (Webster). This continuum certainly possesses a common educational character, but its multi-dimensional nature and "indefinite variations" render it so complex that to describe it requires approximation by an arbitrary number of discrete options. It is the variety of perceptions as to which dimensions are important which has given rise to the plethora of names for the available options and to the differences of definition which exist even for the same name. If all interested parties could at least agree on the source of current confusion, then it might pave the way to the next step which should be to agree on those dimensions and variations which have any importance at all, ranked in order of that importance if necessary, and then to assign appropriate names to the various options.

The CCE Statement of Intent also says that recurrent education offers an "... overarching basis for educational reform ..." (Smith, B. W., 1987, p.7), which seems to suggest that it should subsume all other forms of education so that, for example; adult, further, and continuing education, whether for award or not, would become categories or sub categories of recurrent education. Barry Smith obviously shares this idea, though it is not his main thesis, when he paraphrases the arguments of CTEC and of the Johnson and Hinton Report as follows:

> Continuing professional education, though, is but one element of adult and continuing education, which in turn is only one aspect of recurrent education (Smith, B.W., 1987, p.12).

What begins to emerge is a somewhat shadowy branching classification in which successive levels of branching denote increasing specialization. Whether or not it is still appropriate to name the major branches, primary, secondary, tertiary, adult, etc, or in some other way, remains to be determined, but the issue is further complicated by the existence of other distinctions between tertiary, higher and postsecondary education. The whole area would, in my view, benefit greatly from some creative thought.

What is more important for the purposes of this paper is the place of distance education in the continuum and how it might appear in any classification as, in common with continuing education, it certainly has an instrumental character and is seen by some as having a substantive character as well. One could, for example, teach any continuing education topic, including aspects of continuing education itself, in the distance education mode. Equally, one could offer continuing education programmes, either face to face or at a distance, for professional development of distance educators. This certainly highlights the complexities of terminology and classification but it also serves as a challenge to budding philosophers and theorists.

The challenge, of course, is not confined to matters of definition but extends to the whole area of explanation and prediction in teaching and learning where there is still no generally accepted theory. For example, to what extent and in what ways does the education of adults differ from that of children? Is it really a matter of age as such or is it rather literacy and experience? Is there, perhaps, a greater difference between the extremes of adult education - say basic or remedial on the one hand versus postgraduate upgrading on the other - than between normal secondary and tertiary education?

David Boud, of the Tertiary Education Research Centre, University of New South Wales, has recently drawn attention to the work of Malcolm Knowles which expresses "... the need to examine our teaching practices when confronted with adults and see if we have brought

with us any unexamined assumptions from the world of compulsory schooling." (Boud, 1986, p.240). Boud also points out that:

> There are the beginnings of a substantial body of work to underpin developments in continuing education in higher education. The danger is that the field will be influenced more by opportunities and unaware entrepreneurs than it will by those who have studied the issues and have much to offer to the solutions of the myriad educational problems which arise (Boud, 1986, p.242).

It is not unreasonable to suggest that university distance education offers far more than a convenient means of delivery. It is one area where the adult education issues have been and are being studied, so its combination with continuing education should strengthen the likelihood that both will develop according to valid educational criteria.

Policy: a matter of leadership?

Ruth Neumann and Alan Lindsay of Macquarie University, Australia, in a review article, commend the Johnson and Hinton report for its proposal that the Australian Education Council (AEC) should consider how to organize some national goals. However they go on to say:

> Much of the current lack of coherence and ad hoc nature of the CTEC policy, both for continuing education and more generally for tertiary education derive from the lack of clearly articulated and prioritised goals in government policy. The tendency of the Commonwealth to take upon itself the determination of national policy for tertiary education would be particularly detrimental if repeated for such a decentralised enterprise as continuing education which relies heavily on local initiative. Even the Australian Education Council would need to take into account the dangers of stifling such local initiative in a search for a coherent national policy (Neumann and Lindsay, 1986).

Clearly, this is an area where policy makers at state or federal level would need to tread warily, but it should not be beyond the wit of public servants, or for that matter politicians, to frame policy which is sensitive to established practice and the dedicated people who have made it what it is. Whether or not the AEC will take up the challenge effectively remains to be seen, but nothing should prevent others, even the universities themselves, collaborating to create or revise policies with a view to eventual agreement and adoption at national level. The risks inherent in too parochial a view of universities have been well stated by Joanne Harack Haynes, Associate Editor of the Canadian Journal of University Continuing Education:

> I believe that we in university continuing education are in danger of narrowing our perspective to the confines of our own institutions. Ironically, the impetus for cooperation among various groups in society as a whole has never been greater. It would be a Pyrrhic victory if, in winning the battle for power within the universities, we were to lose the war of educational relevance in the world at large (Haynes, 1985, p.77).

Whether distance education institutions have a distinctive contribution to make here may be open to question, but what is undeniable is that the External Studies Accord of 1983 - an inter university agreement in Australia on transfer of course credits - offers a useful model of what can be achieved , and Deakin University was a major contributor to that Accord. Whoever ultimately sets national goals for university continuing education in Australia would do well to attend to the sorts of questions raised by Gordon Selman, Department of Adult Education, University of British Columbia. He says:

> Thus recurrent education, an approach to adult education which was conceived largely out of a sense of its social impact, its potential for social change, may be adopted for quite other reasons - to make the status quo function more effectively (Selman, 1985, p.82).

His concern is not to be prescriptive but to challenge the framers of policy and the practitioners to clarify their definitions and their aims for, quoting from Robert Blakely, he concludes:

> We can - and usually do - refrain from asking philosophical questions, but we cannot avoid acting according to philosophical assumptions (Blakely in Selman, 1985, p.78).

In a higher education climate which is currently dominated by notions of "efficiency and effectiveness" it would be perilous, to say the least, to set long term national goals without clear understanding of and debate about the underlying philosophy and such theory as exists. In this regard, David Boud observes, rather pessimistically:

> Few practitioners draw upon the body of knowledge which is available now in undergraduate education, so we should not be too optimistic about developments which may be influenced more by a crude response to market forces than by any other single factor (Boud, 1986, p.242).

I also am disinclined to be "too optimistic" but I maintain the view that some recent approaches to university distance education have ably demonstrated the value of practice informed by theory. It seems to me reasonable to expect that this trend will continue, especially in the framing of policy, and that it could easily extend to continuing education. The latter possibility would be greatly enhanced if the distance teaching universities were acknowledged as having a special responsibility for a coordinated national programme of continuing education by distance education.

Practice: a matter of appropriate technology?

Johnson and Hinton drew attention to the lower level of technological assistance in adult education than in education for awards, particularly when comparing the former with distance education's use of audio and video cassettes. They went on to say:

> It was put to us that the ordinary commercial media, especially the radio, could be used much more for educational functions; a talk-back radio program can easily be stimulated by an exposition of some educational matter for less than ten minutes and then the audience can educate itself by the subsequent phone-in and talk-back (Johnson and Hinton, 1986, p.24).

Overseas countries like the USA and Canada which are at the forefront in continuing education have made extensive and successful use of the latest in telecommunications technology; such as radio, satellites, telephone and packet switched networks; to provide students with learning opportunities at a distance. Australia has similar barriers of distance and it has all the same channels of communication, at least potentially available. In some cases the potential has been realized to a limited extent as universities like Sydney, New South Wales, James Cook and Queensland have already used radio and satellite transmissions for some of their continuing education courses. Nevertheless, what Kitty Chisholm, Administrative Assistant in the Scientific and Technological Updating Programme (SATUP) at the UK Open University, said of the situation in Britain is also true in Australia:

> It is now possible for institutions of higher education to become learning brokers, bringing together the most appropriate teacher, medium and learning environment at a time and place which is suited to the individual learner, and at the same time guaranteeing that each learner will share the same standards and quality. The technology is not being used. The impact on continuing education of the new information technology is still at the level of awareness and experimentation, rather than planning or implementation. (Chisholm, 1985, p.60)

It is interesting in this connection to note that the University of New South Wales has just decided to phase out delivery of continuing education courses by radio in favour of self study materials, including audio cassettes, because of "declining enrolments in the radio courses". Nevertheless, the University has continued producing radio programmes for use by the Australian Broadcasting Corporation because, "The audience for this form of delivery is much greater than was achieved through the use of the University's own station, as the program is being broadcast nationally." (UNSW, 1987, p.3). Virtually simultaneously, the University of New England - also in New South Wales - is able to report on a successful experiment in the use of "talkback radio" as a service to its own distant students but with the parallel aim of interesting a wider audience (Gelonesi and Arger, 1987). It seems that, though the more established distance education methods are used increasingly for other types of educational provision, they have made little headway in the continuing education field so far. The reason for this could well be that initial costs are high and must be met from existing university resources, with no special external funding, before any income can be derived from fees. Radio is also costly, but its experimental nature for most academics, its present small scale, and the widespread publicity it offers are probably helping to sustain its place on the fringe of university continuing education provision. Whether it will expand or contract as a delivery mode depends very much on its ability to justify itself in terms of cost and educational effectiveness. In other words, like every delivery mode, existing or potential, it will have to be shown to be an appropriate technology. The challenge is for all Australia's universities, especially those which aspire to leadership in distance education, to develop the use of every appropriate technology in order to make university level education available on a continuing basis to all those who can benefit from it.

How should we proceed?

Rather than attempt to draw any conclusions it seems to me to be appropriate to pose some questions, arising from what I have written, in order to open up discussion and debate which will, I hope, contribute to developments in continuing education by distance education.

- Is it really worthwhile, or even possible, to reach prior agreement on definitions or should we concentrate on development of theory in the hope that the terminology will eventually happen to become standardized?

- Would the combination of continuing education and distance education be mutually beneficial, would it help one area more than the other, or would it help one while disadvantaging the other?

- Is the coordinated national programme of continuing education by distance education a worthwhile suggestion for any country or region and, if so, what should its underlying philosophy be?

- How can the appropriateness of any technology be determined and who should make the judgement? Is it a national or a local issue?

References

Boud, D. (1986)
"Facilitating learning in continuing education: some important sources"
Studies in higher education
vol.11, no.3, pp.237-43.

Chisholm, K. (1985)
"New technologies"
In C. Titmus (ed)
Widening the field: continuing education in higher education
The Society for Research into Higher Education and NFER-Nelson, Guildford.

Gelonesi, J. and Arger, G. (1987)
Talking to New England: radio talkback for distance learning
Sydney Educational Broadcasting Ltd., Sydney, NSW.

Haynes, J.H. (1985)
"The institutionalization of continuing education"
Canadian journal of university continuing education
vol.11, no.2, pp.75-7.

Johnson, R. and Hinton, H (1986)
It's human nature: non-award adult and continuing education in Australia. A discussion paper prepared for the consideration of the Commonwealth Tertiary Education Commission, July 1986.

Neumann, R. and Lindsay, A. (1986)
"The Johnson-Hinton report on continuing education: some implications for higher education"
Australian Universities Review
no.2, pp. 45-7.

Northcott, P. H. (1987)
Higher distance education in Australia
A discussion paper prepared for the Unesco Higher Distance Education Meeting held at Deakin University, Victoria, Australia, 6-11 September 1987.

Richardson, M. (1985)
"Policy, obligation and right"
In C. Titmus (ed)
Widening the field: continuing education in higher education
The Society for Research into Higher Education and NFER-Nelson, Guildford.

Roberts, H. (1985)
"Peace education and university continuing education"
Canadian journal of university continuing education
vol.11, no.2, pp.86-94.

Selman, G. (1985)
"The adult educator: change agent or program technician?"
Canadian journal of university continuing education
vol.11, no.2, pp.77-86.

Smith, B. (1984)
A review of continuing education by the Australian universities
Department of Community Programmes, University of Newcastle.

Smith, B. W. (1987)
The financing of adult education in Australia: a view from the perspective of recurrent education
An unpublished paper.

Titmus, C. (1985)
"Higher education in continuing education"
In C. Titmus (ed)
Widening the field: continuing education in higher education
The Society for Research into Higher Education and NFER-Nelson, Guildford.

University of New South Wales
Continuing education activities 1986
UNSW 26th annual report on continuing education, Sydney, NSW.

Higher Level Training and Retraining: Graduate work by Distance Education

Paul H Northcott

Deakin University
Australia

Abstract

This paper suggests guidelines on preparing and conducting distance education programmes at the postgraduate level.

Suggested guidelines are given in preparing and conducting distance education programmes that lead to the following awards: B.Litt.; graduate diploma; master and doctorate. These are programmes which are in part completed by coursework in which the teaching materials have been specially prepared for postgraduate distance students enrolled in the programme. In addition, such programmes will usually require either a dissertation or project or thesis to be written by the distance students. Postgraduate studies by research only are not the focus of these guidelines. Nor am I concerned with graduate research studies in which one or more of the supervisors is/are external to the institution at which the student is enrolled. These are separate and important issues. Particular attention is paid to Australian examples of coursework or "taught" masters degrees by distance education. Special attention is paid to the current literature on graduate studies by distance education and the need to make provision at the graduate level for: seminars and residential schools; project/dissertation supervision; academic counselling; access to postgraduate library resources and appropriate assessment methods. The paper also mentions briefly the special administrative requirements of postgraduate programmes by distance education.

Introduction

There is a rapidly growing number of postgraduate students taking courses by distance education. They still remain a small proportion, however, of the total number of distance students. The vast majority of higher education distance students are undertaking courses at the undergraduate level. I note, however, that there is now a rapidly increasing number of distance courses being offered at the postgraduate level, including postgraduate level professional continuing education programmes.

This paper recognizes that there is a qualitative difference in what should be expected of teaching and learning by distance education at the postgraduate compared with the undergraduate level. I discuss how this qualitative difference can be fostered by contemplating the standards and guidelines one should expect of the process of conducting high quality postgraduate programmes by distance education.

The issues identified in this paper suggest some lines of research that are needed in post-graduate studies by distance education. By implication, the paper also advocates the need for professional development programmes for distance educators engaged in teaching postgraduate programmes by distance education.

Major issues as revealed by the literature

There is a limited literature on graduate teaching through distance education: Bynner (1985a and b, 1986); Bynner and Henry (1984); Duignan and Teather (1985); Phillips (1985); Smith (1981 and 1984) and White (1980).

Most of the contributors to this literature are from the UK Open University (Bynner, Henry, Phillips and Smith) and the viewpoints they express are mainly in the context of the UK Open University.

Before explaining this literature it is worth noting that Castan (1976), from Queensland University, deplored the lack of opportunity for particularly able students to do honours work through distance education and thus qualify for masters level work. It is worth reexamining Castan's indictment of "disadvantaged exceptional external students" and his notion of "the thesis maturation stage" made possible by honours and masters preliminary work by external studies. It is also interesting to note that the academic conservativeness of 1976 is not so strongly entrenched now, at least in certain academic fields.

Bynner (1985b), summarizes well the major problems that are generally perceived to occur with coursework masters through distance education. His study was of the five Australian universities engaged in external studies (Queensland, New England, Macquarie, Deakin and Murdoch) and Massey University, New Zealand:

> ...Another interesting pointer to the status of distance education is how far the university believes it can be used for advanced courses- masters work particularly. The belief dies hard that only fairly elementary courses can be taught externally; for post-graduate work, face-to-face teaching, seminars and project supervision are considered essential (see Bynner and Henry, 1984).
>
> The universities are all at different stages with respect to their resolution of this problem. Deakin and New England have no inhibitions about teaching whole masters programmes externally and their success is indicated by the considerable number of students who apply to do them. With Deakin, as might be expected, the key is seen to be in effective models of course design and a variety of highly imaginative approaches to it have been tried; some, in effect, simulating seminar work at a distance-backed up by a first-class library service. In New England, again, the crucial element is the residential school where intensive seminar work can be undertaken and the library used for advanced study. Queensland teaches whole masters degrees at a distance, again relying on its excellent library and study centre facilities. Massey teaches postgraduate diplomas externally, but has yet to gain approval for full masters programmes from the New Zealand University Grants Committee, where opposition from other universities is strong.
>
> In Murdoch, the debate about whether to teach whole masters programmes externally hinges partly on workload and partly on the role of seminar teaching. The lack of residential schools rules out face-to-face work so those who believe that the seminar is the cornerstone of postgraduate teaching are resistant to the ideas of introducing it, even though many advanced undergraduate courses studied externally do

> double up in the internal masters programme. Macquarie goes futher in defining masters work as seminar work, which in their view rules out masters teaching from the external programme" (pp.528-529).

The aspects of: postgraduate seminars; project and dissertation supervision; access to postgraduate library resources; residential schools, individual tuition and counselling, are discussed more fully below.

Bynner and Henry (1984), indicate that the following are required if projects are to be effective at masters level:

- The project should represent continued work over an extended period.
- The project should provide opportunities for the students to undertake original work based on the students' use of their own local resources.
- There should be an opportunity to display higher cognitive skills (analytical, synthesizing and evaluative) and organizational and problem solving skills in the conduct and writing up of the report.
- Supervision and guidance must be available at appropriate times to ensure the work is both feasible and stays on course.

Swift (1984), in her evaluation of Bynner's research methodology MA course at the UK Open University, notes that the students gave bottom ratings to:

- "accessibility of tutorial/day schools";
- "amount of tuition relative to your needs";
- "adequacy of the arrangements for computing" and
- "adequacy of the arrangements for you to communicate your problems/difficulties/ queries."

Top ratings were given to:

- "quality of the learning materials";
- "adequacy of the system for sending you materials/information";
- "interest in you personally";
- "fairness of the assessment/the marking".

Bynner (1986), stresses the need to *schedule* project/dissertation work and to pace the students' work with appropriate feedback on formative exercises and a well run administrative system. My observation is that the level of staffing required of dissertation supervision can be relatively high compared with coursework supervision and some masters programmes by distance education have already got into trouble because they have not recognized this in their planning. Moreover, complications have also occurred because of a failure to put in place, in advance, the necessary administrative structures and the system of safeguards which encourage students to "stay on course" during their dissertation work.

There are proposals, however, being discussed to make the programme entirely one of coursework. The Deakin MBA has always emphasized the practitioner and vocational, rather than the reserch and strictly "academic" aspects of business administration. Moreover, in 1987, it was decided, after considerable debate, to make the project an elective, not a core requirement of the programme as it had been previously.

In an earlier study, Swift (1981), compared the attitudes of full time and part time, on campus postgraduate students with external postgraduates. Her study included PhD and B Phil as well as masters students. This study is particularly useful in that it highlights the problems all postgraduate students have and particularly postgraduate, part time external students. She comments on problems associated with access to library resources (including literature searches), record searches, research/project design, data collection, data analysis, report/thesis writing and supervision of their studies.

Duignan and Teather (1985), provide a useful case study of the MEd Admin by distance education at the University of New England. Enlightening, is their portrayal of the different views evinced by the staff engaged on the programme on the process and problems of supervising research and thesis writing. Apparently the confusion is caused, in part, by whether a taught (coursework) masters by distance education should require actual research or merely show awareness of the nature of research. This is by no means a problem that is confined to the MEd Admin of the University of New England. Currently, the Deakin MEd Admin requires a 2 semester weighted dissertation out of a total programme of 8 semester units. There are proposals, however, being discussed to make the programme entirely one of coursework.

The Deakin off campus MBA has always emphasized the practitioner and vocational, rather than the research and strictly "academic" aspects of business administration.

The UK Open University's first taught masters was on research methods and was designed for people to be trained to undertake research rather than do research for the requirements of the programme. The programme did require, however, two major projects to be completed.
Thus masters courses can attempt to combine, not always successfully apparently; coursework (theory and practice); training in research methods and the supervision of an individual research topic.

On the succesful completion of a coursework masters, the next stage perhaps, would be either an EdD (for MEd and MEd Admin holders) or a DBA for MBA holders. The PhD would normally be reserved for researchers who would have prepared for this work by undertaking a research based masters. Currently, however, in Australia, EdD and DBA awards are not available.

Phillips (1985), reports on a two year study of the supervision of UK Open University postgraduate students at a distance. Particularly useful is her analysis of the role and responsibilities of internal (UK Open University) and external (non UK Open University) supervisors and the effectiveness of using both internal and external supervisors.

White (1980), in a relatively early paper on this topic draws useful insights from an American study. The scepticism and criticism of the "mail order degree" business is well countered, in White's view, by the way the EdD and DPA (Doctor of Public Administration) of Nova University, Florida, are conducted:

- the nationally based external programmes have been designed for practitioners rather than researchers (community college personnel, school system administrators and senior administrators in public and community service agencies);

> ... Nova has made an intellectually honest distinction between the preparation needed for practitioners ... and that demanded of a person seeking the research training of the PhD degree (p.189)

- The "cluster" is a local group of about 30 students. Each "cluster" has a coordinator appointed from the local area by the Nova authorities.

- Study modules are specially prepared by lecturers of national standing in their fields. (This is similar to Deakin's use of "consultants" who prepare study materials for course teams).

> Their participation [i.e. lecturers of national standing], more than any other factor, puts a stamp of high quality on the Nova doctoral programmes. Each national lecturer prepares a study guide and visits students in each cluster once a month for an intensive Saturday study session. Set assignments are assessed by the national lecturers (p.190).

- Students are required to complete *practicums* (projects) guided by specially prepared manuals. Nova staff provide evaluation of, and guidance on, the practicums.

- During the three year study programme all students are required to attend an eight-day summer *institute* for each year (residential school). These institutes are held at Nova University, Fort Lauderdale, Florida.

- In place of the PhD dissertation, each student is required to undertake an *applied research project* which focuses on practical problems.

> It requires students to bring to bear on such problems the relevant theoretical ideas and research findings, and to work through a solution to them (p.192).

In summary, the Nova programmes are richly resourced as can be seen from this description:

> "... the Nova doctoral candidates receive study guides prepared by the national lecturers, use a practicum manual, receive face to face teaching at cluster and summer institute meetings, have regular contact with cluster co-ordinators and each other, and enjoy regular feedback from the national lecturers and practicum evaluators. But in addition, each student has access to a limited range of library books supplied by Nova to each cluster. Students also can use exceptional library facilities in their own regions. Each cluster too has a modest financial allotment from which supplementary reading material may be purchased as needed. Nova also supplies videotaped overviews of each subject area, and Nova practicum reports completed in previous years are made available in microfiche form.
>
> Alongside these services, Nova provides an information retrieval service. This houses the entire microfiche collection of the Educational Resources Information Centre (ERIC). The Nova retrieval service in addition provides computer access to ERIC and other relevant data bases in the U.S.A. as well as computer printout facilities for literature searches. Students pay a small fee for the printout services" (p.192).

For such services, however, the students pay a substantial fee! In comparison to full time study, however, this is still cheaper as the students remain in full time employment whilst undertaking their studies.

I have quoted from the literature, such as it is, the main concerns that have been expressed on the process of *teaching masters and other postgraduate degrees by distance education.* These main concerns are now examined in more detail. Having identified the problems, it is now easier to see how they can be overcome and how effective masters courses can be designed and conducted through distance education.

Seminars and residential schools

Seminars are seen as a crucial part of postgraduate work. The postgraduate seminar provides the framework for dialogue between lecturers and students and among the students themselves. Seminars, therefore, should be included in the residential school programmes. Some seminars might also be undertaken by either audio or computer conferencing or by a combination of both methods. There is some evidence to suggest that seminars are more suitably conducted by telephone (teleconferencing) than tutorials by the same method. Robinson (1984), notes that there needs to be more pre arranged structuring of the session than occurs in a face to face tutorial. The convenor role is, therefore, stronger in teleconferencing and could well be better suited to either staff or student led seminars.

> ...A telephone session, even with a small group, requires more preparation of support materials (such as agendas, worksheets, reading list and diagrammatic material), and a longer lead-in time for setting up the event than would be necessary for a face-to-face meeting. The material chosen, and the topics to be covered, also need to be more specific than for a face-to-face meeting.
>
> The lack of visual contact in a telephone teaching group places the tutor or teacher more firmly in command of the event in the perceptions of other participants than is the case for an equivalent face-to-face group. The tutor takes control of organising the speaking space for all, indicates turn-taking, most frequently takes the initiative in opening an interchange or in questioning, and is the chief, if not sole, recipient of verbal communications from others" (p.131)

The presentation, publication and distribution of seminar papers among class members is seen as a valuable part of graduate study. A course in the Deakin MEd programme provides state of the art papers and bibliographies from which the students are required to develop their own study materials and "seminar papers". The papers are shared with staff and fellow students and, after feedback and revision, are subsequently published in an in house journal.

The use of electronic mail and computer conferencing are also methods of fostering "seminars" among distance students. These techniques have already been used successfully on a pilot basis by three of Deakin's remote MBA students in their preparation of group case studies.

In addition to the seminar work already discussed, residential schools can also be a valuable time for students to discuss their coursework, projects and dissertations with individual members of staff. The residential school can also provide an opportunity for "hands on" experience for science and technology students and for the development of skills in areas such as computing, interviewing, interpersonal relations, group decision making, case studies, experimental exercises etc. Interactive video discs, as they become available, will also probably be most conveniently used at residential schools in group work rather than by individual distance students studying independently at home.

Residential schools are demanding and exhausting for both staff and students. They also help to motivate both staff and students and provide a major contribution to the teaching and learning process in association with the individual study component.

Project/dissertation supervision: academic and workplace related counselling

Distance students often need a sympathic tutor/counsellor to help them deal with the combined pressures of study, work and family responsibilities. At the postgraduate level, the students need *individual* help from a tutor who has *specialized knowledge* of the topic under scrutiny. At the undergraduate level such specialized knowledge is not necessarily required. Access to "real time" discussion of problems is important. Hence, telephone discussions often play an important part in this interaction. The tutor/counsellor also needs to help the student *schedule* his or her work, especially the project/dissertation components; the "staying on course" aspect quoted from Bynner above.

An encouraging development is the introduction of industry based tutors. This is especially a feature of some United Kingdom distance and open learning programmes. The industry based tutors provide a work related focus which complements the counselling and support provided by the academic tutors. The papers by Mohle (GDR) and Solianik (USSR) in this book provide useful insights on how dissertations are enriched by the encouragement provided by workplace related and supported study. My own research at present studies the role, tasks and training needs of industry tutors and includes examination of the complementarity of the roles and the nature of the exchanges of information between academic and industry tutors.

Access to postgraduate library resources

Access to academic and professional literature can be a problem for distance students. This includes not only access to texts and journal articles but also to bibliographic data bases. There will be exceptions, but access to specialist literature in the scientific, mathematical and technical fields will generally be more difficult than for arts, social sciences and education external students. It is not solely a question of availability of the literature but the borrowing rights of external students.

Interlibrary loans can be a problem for postgraduate external students. The problem could be a combination of costs and of inconveniences caused by delays. Swift (1981), reported that the difficulties most often faced by graduate external students were, in order of severity: inter-library loan delays and facilities; borrowing rights and photocopying facilities.

Assessment

The Postgraduate Training in Australia (Handbook for Overseas Students) 1984, compiled by Lockyer, lists how the various programmes are assessed. Statements of requirements and methods are given but no rationale is offered for the methods used. For instance, on the face of it, there are no differences in the *methods used* for graduate diplomas compared with masters programmes. In both types of programmes the usual method is a combination of continuous assessment (assignments) and formal examinations. In addition, the students may also be required to submit practical class, fieldwork or other types of reports, marks may be given for seminar papers and vivas. It is difficult and dangerous to generalize about such a sensitive academic areas. Suffice it to say, that just as the quality

of supervision needs to be planned for and safeguarded, so also do we need to consider carefully the assessment methods.

It is interesting to note that for many courses, overseas students are permitted, by the rules governing assessment, to return to their home countries to undertake fieldwork. In this sense they become "external" students.

Conclusions

The above discussion suggests that planning for proposed postgraduate programmes by distance education should include, as well as aims, content and course structure, whether conducted on a modular or sequential basis and the procedures concerning student selection, (subject pre requisites, professional experience and advanced standing) etc.; information on the proposed *process by which the programme is to be taught.* The following list of questions are indicative of the information that will need to be addressed on the *process* aspects we have discussed above:

- Is provision to be made for postgraduate seminar work to be undertaken either in local study groups or in residential schools or by a combination of these or by other methods?

- What weighting, in study time and credit, is given for coursework, compared with project/thesis/dissertation? How are these components to be integrated? What student support, in the form of academic tuition and counselling, will be provided for each of these aspects of the programme? Will industry tutor support be provided?

- How will the students be provided with access to postgraduate library resources: texts, journals, bibliographic data base searches, abstracts?

- To what extent is the programme research oriented, i.e. what proportion of time is devoted to instruction in research methods and what proportion is to be spent in undertaking a research dissertation or thesis? What provision will be made, and the methods used, for teaching about research and in the supervision of research at a distance?

- To what extent will the programme be practitioner (vocationally and professionally) oriented? What provision will be made to ensure that practitioner knowledge and skills will be satisfactorily developed by the programme?

- What student assessment methods will be employed in the programme and what is the rationale of such an assessment profile?

- What administrative systems and services will be provided to ensure that project, dissertation and thesis supervision are well organized?

- What provision will be made to ensure that the range of staff qualifications, experience and continuity is satisfactory to maintain the quality of the teaching in the distance education mode? Continuity in staff support needs stressing because of the relatively longer time part time, distance students will take to complete their degrees compared with full time, on campus students.

- Will the staff:student ratio be such that the supervision of the studies, especially of dissertation preparation, be satisfactorily catered for?

References

Bynner, J. (1985a)
MA (Education) draft guidelines for module presenters.
Unpublished internal paper, The Open University, Britain.

Bynner, J. (1985b)
"Collaborative Schmes and the ethos of distance education: a study of Australian and New Zealand Universities",
Higher Education, 14, 513-533.

Bynner, J. (1986)
"Masters Teaching in Distance Education",
Distance Education, 7, 1.

Bynner, J.M. and Henry, J. (1984)
"Advanced project work in distance teaching",
Higher Education, 13, 413-421.

Castan, C. (1976)
"Independent Study for External Undergraduates at the University of Queensland",
Epistolodidaktika, 1976/2, 146-153.

Duignan, P.A. and Teather, D.C.B. (1985)
"Teaching educational administration externally at post-graduate level at the University of New England",
Distance Education, 6, 1, 34-55.

Locker, T.N. (1984)
compiled and edited by,
Postgraduate Training in Australia,
(Handbook for overseas students), Second Edition,
Australian Universities International Development Program (AUIDP)
on behalf of the Australian Vice-Chancellors' Committee, Canberra, ACT.

Phillips, E.M. (1985)
"Supervising postgraduates at a distance"
Teaching at a Distance, no. 26,
Autumn, 23-31.

Smith, B. (1981)
Studying as an Open University postgraduate:
the students' perspective.
A paper prepared for the Higher Degrees Committee of the Open University.
SRD Paper no. 196.

Smith, B. (1984)
Students' views on DE 801 - the first OU taught higher degree. Main findings and implications of a survey of the first two years' intakes of students. Survey Research Department Paper number 257, February, 1984, The Open University, Walton Hall, Milton Keynes, England, MK7 6AA.

Robinson, B. (1984)
"Telephone teaching" in Bates, A.W. ed.,
The role of technology in distance education,
Croom Helm, London and Sydney, 121-137.

White, M.A. (1980)
"Graduate degrees by external study: the Nova University programmes in Florida",
Distance Education, 1, 2, 188-197.

Monitoring Student Progress or If Nunits > Half * EnrolUnitsYear THEN ListStudent$ = "Yes"

Les Smith

Academic progress

Evaluation of academic progress is not an enviable task. Most of the time one confronts problem students rather than successful students. Academics responsible for monitoring academic progress have to confront the unsatisfactory performer and it is this that we are concerned with here. It is helpful if simple, accurate and quickly monitored results can be at hand for academics to use in counselling students.

Rules or guidelines

Most educational institutions develop a means of control over academic progress. This is usually a set of rules or guidelines which can be applied to academic results. Academic progress rules in this context are related to a rate of achieving credit units or credit points over time and must be clearly separated from academic performance on individual assignments or examinations as such.

Evolution of academic progress

Deakin University confronts the evaluation of academic progress in a number of ways:

- Lecturers and tutors evaluate students during normal academic duties - an evaluation of academic performance in a course;
- academic staff usually present the student administration system with mark sheets so that results are entered on a student's history sheet - students receive some evaluation regarding their progress in this way;
- at the School level, a committee governs the evaluation and at University level a further committee oversees the University policy.

I would like to share with you some of my experiences at the School level. In particular, my involvement within the academic community of the School of Humanities (one of seven Schools at Deakin University).

Historical beginning at Deakin

Deakin University began in 1977 with an inherited student population from the Gordon Institute of Technology and the Geelong State Teachers College. Within the School of Humanities the initial method of evaluating academic progress was simple. The then Sub Dean kept a few simple rules which he applied to the student population twice yearly. The student population was small (a few hundred) and the Sub Dean, assisted by a secretary, maintained a progressive filing system for each student. It was possible for the Sub Dean to know all the students personally. Some he tutored, others were known through correspondence or through staff communication. In short, the one person with the help of a secretary could administer the progress rules easily.

Growth places stress on system

The growth of Deakin University, however, placed great stress on this simple system. All the student records had been transferred to a computer data base within the Student Centre, (a centralized system) from which a computer printout emerged twice a year (Figure 1). This computer printout lists all the results for the current semester. In an effort to cope with the increasing problem of monitoring academic progress a committee of academics was formed, called the Academic Progress Committee. This committee included a representative from each area of study within the School. The Academic Progress Committee had the task of evaluating each student according to the data contained on the printout and against rules governing satisfactory academic progress.

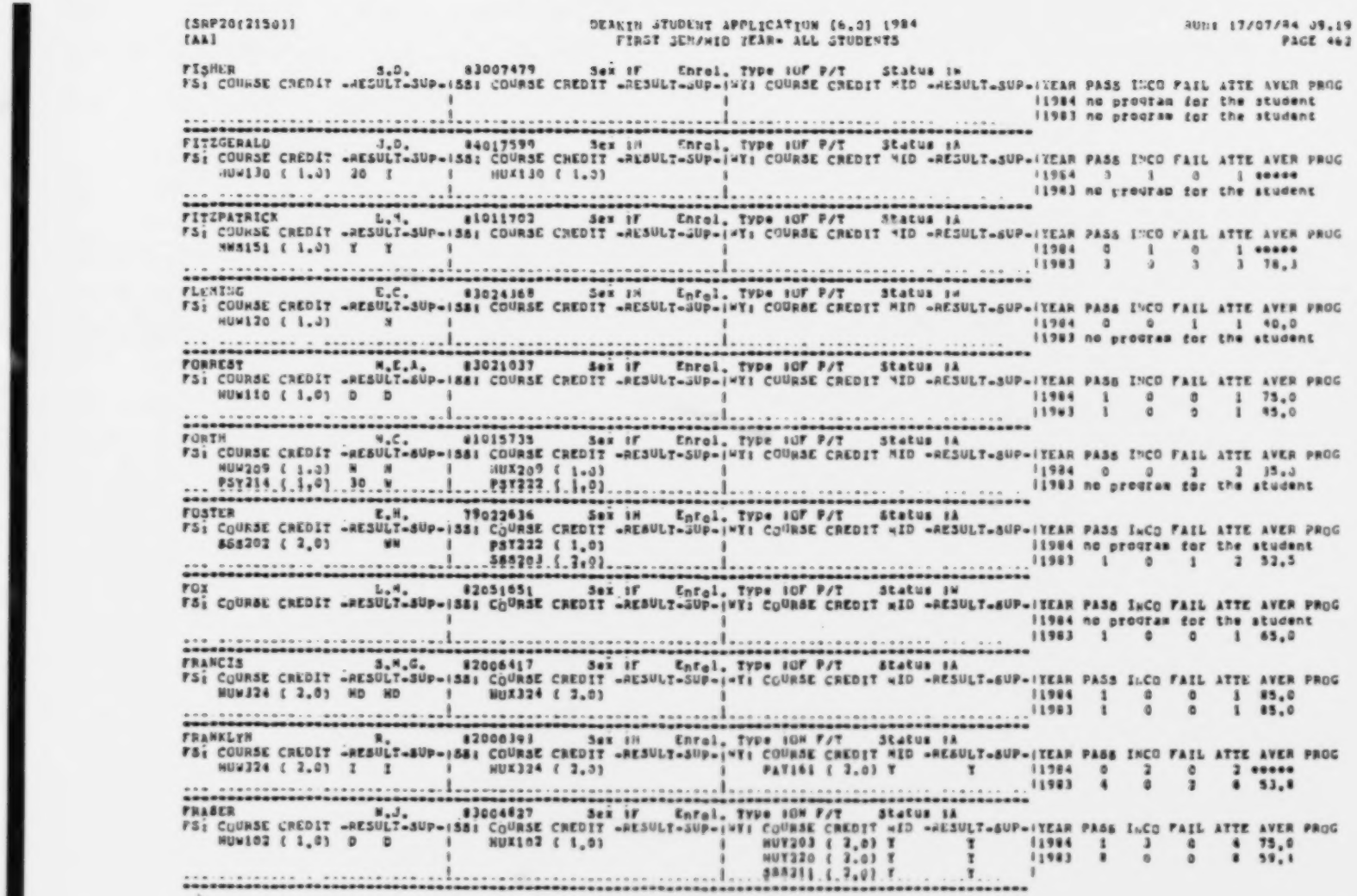
Unfortunately, the computer printout was almost impossible to comprehend. Even the simplest task of applying a fundamental rule such as, " Has the student failed more than half his/her enrolled units?", became a major task with so many students and courses. The task of evaluating students against a set of rules became unmanageable. The progress committee was required to sit for two or three days in an effort to achieve its goal. Apart from this being an unsatisfactory experience, the end result often produced significant errors which were brought about by misreading the computer printout, or by overlooking important values requiring human calculation. Fatigue also contributed to these errors.

Evolution of computer program

After some years of frustration it was felt that a computer program was needed to execute most of the evaluation process and provide an output that consisted of several shortlists which could be placed before the progress committee. The main sorting task was to be handled by a computer program.

Ten minutes and without errors

After a development period lasting two years (1983-84), the School of Humanities implemented what is now known as APE (Academic Progress Evaluation). Whereas the evaluation task had taken two to three days in committee and included many errors, it could now be executed in about ten minutes with no errors. The transformed output from the evaluation program can be seen in Figure 2.



```
[SRP20(21501)]                    DEAKIN STUDENT APPLICATION (6.3) 1984                    RUN: 17/07/84 09.19
[AA]                              FIRST SEM/MID YEAR- ALL STUDENTS                         PAGE 462

FISHER                S.D.      83007479      Sex IF    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
                              |                               |                                 |1984 no program for the student
                              |                               |                                 |1983 no program for the student
================================================================================================
FITZGERALD            J.D.      84017599      Sex IM    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    HUW130 ( 1.0) 30  I       |    HUX130 ( 1.0)              |                                 |1984  0    1    0    1  ***** 
                              |                               |                                 |1983 no program for the student
================================================================================================
FITZPATRICK           L.T.      81011702      Sex IF    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    MM8151 ( 1.0) Y   Y       |                               |                                 |1984  0    1    0    1  ***** 
                              |                               |                                 |1983  3    0    0    3  78,3
================================================================================================
FLEMING               E.C.      83024168      Sex IM    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    HUW120 ( 1.0)     N       |                               |                                 |1984  0    0    1    1  40,0
                              |                               |                                 |1983 no program for the student
================================================================================================
FORREST               M.E.A.    83021037      Sex IF    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    HUW110 ( 1.0) D   D       |                               |                                 |1984  1    0    0    1  75,0
                              |                               |                                 |1983  1    0    0    1  85,0
================================================================================================
FORTH                 W.C.      81015733      Sex IF    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    HUW209 ( 1.0) N   N       |    HUX209 ( 1.0)              |                                 |1984  0    0    2    2  35,0
    PSY214 ( 1.0) 30  N       |    PSY222 ( 1.0)              |                                 |1983 no program for the student
================================================================================================
FOSTER                E.H.      79022636      Sex IM    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    SS8202 ( 2.0)     WN      |    PSY222 ( 1.0)              |                                 |1984 no program for the student
                              |    SS8203 ( 2.0)              |                                 |1983  1    0    1    2  52,5
================================================================================================
FOX                   L.M.      82051851      Sex IF    Enrol. Type IOF P/T    Status IW
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
                              |                               |                                 |1984 no program for the student
                              |                               |                                 |1983  1    0    0    1  65,0
================================================================================================
FRANCIS               S.M.G.    82006417      Sex IF    Enrol. Type IOF P/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    HUW324 ( 2.0) HD  HD      |    HUX324 ( 2.0)              |                                 |1984  1    0    0    1  85,0
                              |                               |                                 |1983  1    0    0    1  85,0
================================================================================================
FRANKLYN              R.        82006393      Sex IM    Enrol. Type IOM F/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    HUW324 ( 2.0) I   I       |    HUX324 ( 2.0)              |    PAY161 ( 2.0) Y        Y     |1984  0    2    0    2  *****
                              |                               |                                 |1983  4    0    2    6  53,8
================================================================================================
FRASER                N.J.      83004827      Sex IF    Enrol. Type IOM F/T    Status IA
FS: COURSE CREDIT -RESULT-SUP-|SS: COURSE CREDIT -RESULT-SUP-|WY: COURSE CREDIT MID -RESULT-SUP-|YEAR PASS INCO FAIL ATTE AVER PROG
    HUW102 ( 1.0) D   D       |    HUX102 ( 1.0)              |    HUY203 ( 2.0) Y        Y     |1984  1    3    0    4  75,0
                              |                               |    HUY320 ( 2.0) Y        Y     |1983  8    0    0    8  59,1
                              |                               |    SS8211 ( 2.0) Y        Y     |
================================================================================================
```

Figure 1 Computer printout difficult to comprehend

Figure 2 Benefits

```
SCHOOL OF HUMANITIES ACADEMIC PROGRESS COMMITTEE 24-Jul-87   12:16:55
FILE 1 EXCLUDE.HUM2          SHOW CAUSE...
-------------------------------------------------------------
SMITH,IW            Numb:83345678 Sex:F BDate:040142 EnrTy:OF F/T
                    AdvStCred:00.00 Status:A Prog:413 Lev:1 TotProgCr:4 EquivYearsActiveEnr(F/T):2.5 ElapsedSemesters:8
   Course | XMA105 | XMA302 | SSS106 | SSS121 | XMA113 |                    | HD= 0 | N= 0 | TotalCourses 5
   Mark   | -     | -      | -      | -      | -      |                    | D= 0  | I= 0 | EnrUnitsYear 7
   Grade  | Y     | Y      | WN     |        |        |                    | C= 0  | WN= 1| TimeFactor 2
   UnVal  | 01    | 02     | 02     | 01     | 01     |                    | P= 0  | W= 0 | TimeAllowed 5
   Semest | Y     | Y      | 1      | 2      | 2      |                    | PC= 0 | Y= 2 | CreditUnits 4
   PrFail | no    | no     | no     | no     | no     |                    | P*= 0 |  0   | ProgressNeeds 9
     REASONS FOR LISTING STUDENT...                          ACTION REQUIRED...
    TimeFactor >= 2 AND CreditUnits < 5   A(vi)              Letter ... SHOW CAUSE

------------------------------
BROWN,AL            Numb:84045678 Sex:F BDate:301060 EnrTy:OF F/T
                    AdvStCred:00.00 Status:A Prog:413 Lev:3 TotProgCr:11 EquivYearsActiveEnr(F/T):2.5 ElapsedSemesters:8
   Course | HUI305 | HUA305 | HUA306 |                                    | HD= 0 | N= 1 | TotalCourses 3
   Mark   | -     | H      | -      |                                    | D= 0  | I= 0 | EnrUnitsYear 6
   Grade  | WN    | H      |        |                                    | C= 0  | WN= 1| TimeFactor 2
   UnVal  | 02    | 02     | 02     |                                    | P= 0  | W= 0 | TimeAllowed 5
   Semest | 1     | 1      | 2      |                                    | PC= 0 | Y= 0 | CreditUnits 11
   PrFail | no    | no     | no     |                                    | P*= 0 |  0   | ProgressNeeds 9
     REASONS FOR LISTING STUDENT...                          ACTION REQUIRED...
    Failed All Assessable First Sem Units   A(i)             Letter ... INTERVIEW
    Nunits+WNunits > Half the EnrolUnitsYear    A(iii)       Letter ... SHOW CAUSE

------------------------------
-------------------------------------------------------------
TOTAL ON EXCLUDE FILE= 2
```

The benefits from this computer assisted process are:

- An accurate evaluation - all students are tested against the same criteria without variation. The computer does not become fatigued after hours of repetitive processing.
- Elaborate tests can be developed and implemented, which would be almost impossible to execute by a manual method.
- Students in need of counselling can be identified accurately and quickly.
- The process can be executed at any time from almost anywhere - a telephone line and a modem linked to a microcomputer enables the process to be executed from any office, at work or at home.
- The time required to complete the evaluation is short - something of the order of five minutes for each 1,000 students.

How does it work?

Briefly, the computer program evaluates a sub set of data from the student data base and tests the academic progress of each student against a set of criteria or rules. If the program finds any student who has not satisfied the basic rules then that student is shortlisted for attention. Thus, only those students in need of attention are extracted from the total School population.

Reasons and actions

The computer program also provides the reasons for listing each student and the action which should follow. A clear documentation of these reasons is important as they have a direct relationship with the School's rules. During the follow up interviews with defaulting students the initial evaluation, along with reasons and actions, are clearly displayed without the need to reevaluate.

Set of criteria

A fundamental requirement behind the computer program is the set of criteria or academic progress rules which govern the progress of students. The 1986 set of rules for the School of Humanities is illustrated in Attachment 1. Not all the rules need transforming into the set of criteria used by the computer program. A typical transformation follows:

> Where a full time student has failed more than fifty % of the unit value of the courses in which he/she enrolled for the year as at April 30 the student shall be asked to show cause why he/she should not be excluded from the programme in which he/she is currently enrolled.

The above School rule becomes transformed into the computer program and looks like:

```
IF Nunits > 0.5 * EnrolUnitsYear &
THEN ListStudent$ = "Yes" \ List1$(next%,1) = &
Criteria$(4) \ List1$(next%,2) = Action$(1) \&
FileToPrint$(1) = "Yes"
```

Now the above is programming code written in BASIC to match the requirements of a Digital DEC 20 computer. The "Nunits" is a numeric variable in which is stored the number of failed units. In the same way "EnrolUnitsYear" contains the number of enrolled units for the year. Thus the test asks the question: If failed units is more than half the enrolled units for the year, then the student must be listed on a shortlist called exclude (FileToPrint$(1)). In the process the reason for listing the student (Criteria$(4)) and the action which follows (Action$(1)) are also placed on the same file.

The "test"

The computer program "runs" and tests the student's performance against this criterion and if the answer to the test is negative (not true) then no action is required. However, if the test is positive (true) then the student's name, along with all his/her current academic details, are placed on a "shortlist" for consideration by the progress committee. The program tests each criterion in the same way.

Listed on one shortlist only

There may be several reasons why a student would be shortlisted. However, the student is placed on one shortlist only and the most serious action that needs to be taken has precedence. This is to avoid the situation where a student could be sent several letters as a result of being on several shortlists.

Shortlists

Hard copy shortlists, produced by the computer program, are placed before the progress committee. An example is shown in Figure 2. The reasons for the listing and the matching action are clearly shown. This provides the committee members with a relatively simple task rather than the fatiguing calculations required of the previous manual method.

Hardware and software

The program runs on a Digital DEC 20 mainframe computer and is written in the Basic+2 programming language.

Computer process

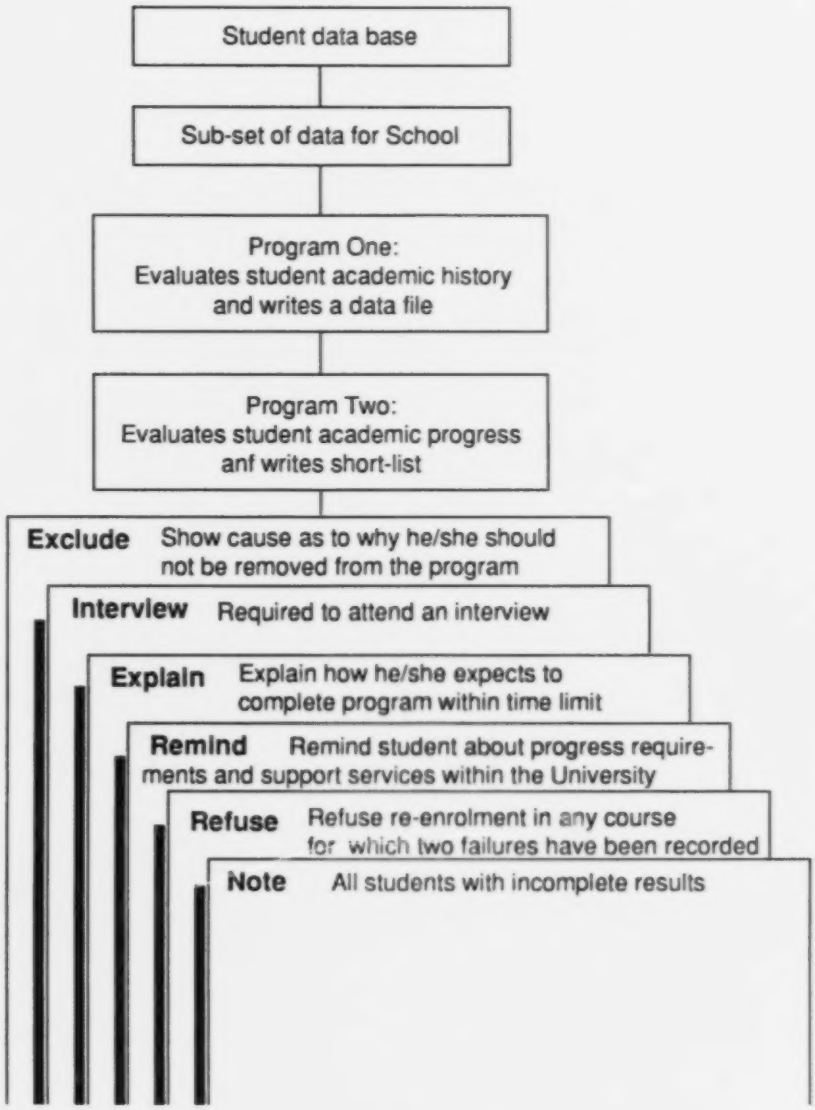
The complete computer process is a series of steps:

1 A sub set of data is obtained from the general student data base which matches the School concerned.

2 This sub set of data is transformed by the first stage computer program. This process assembles a summary of the academic status for each student. This becomes the second set of data and is accessed by the main evaluation program.

3 The evaluation program, or second stage, executes and produces a number of shortlists or files. These files are stored on computer disk and can be examined on a monitor or printed to paper. See Figure 3 for a diagrammatic version of the process.

Figure 3


Student data base
Sub-set of data for School
Program One:
Evaluates student academic history
and writes a data file
Program Two:
Evaluates student academic progress
anf writes short-list
Exclude Show cause as to why he/she should not be removed from the program
Interview Required to attend an interview
Explain Explain how he/she expects to complete program within time limit
Remind Remind student about progress requirements and support services within the University
Refuse Refuse re-enrolment in any course for which two failures have been recorded
Note All students with incomplete results

Conclusion

The use of a computer in the evaluation of academic progress is a natural extension of the way in which student academic records are stored. Where the processing or evaluation involves computation on a repetitive basis the computer is a valuable aid. Sifting and sorting are processes which computers do very easily and very effectively. Providing that the rules governing academic progress can be transformed into a computer language then this very powerful facility can free staff from unnecessary drudgery and enable them to place a greater concentration to be placed on counselling and pastoral care.

DEAKIN UNIVERSITY

SCHOOL OF HUMANITIES ACADEMIC PROGRESS RULES

Revised September 1986

1. Pursuant to Regulation 5.7(1) Assessment and Academic Progress the Academic Progress Committee of the School of Humanities shall review all students' results each semester. The Regulation empowers the APC to implement the policy of the School's Board of Studies with regard to all matters related to the academic progress of students enrolled in undergraduate degrees and diplomas, honours degrees, graduate diplomas, masters preliminary programs, masters degrees by course work and B.Litt. degrees.

2. The following progress rules apply to the Bachelor of Arts, Bachelor of Arts with Honours, MA Preliminary Year, MA by course work and B.Litt..

3. At the end of each semester of each academic year the APC shall review the results of each student enrolled in a program referred to in paragraph 2 of these rules and may take such steps in respect of any student as it is empowered to do in accordance with regulation 5.7(1).

4. For the purposes of these rules failure means both N and WN grades.

5. Where calculation of half the number of units for which a student has enrolled results in a fraction, the fraction shall be taken to the nearest higher whole number.

BACHELOR OF ARTS

A. Full time students

Students who are enrolled in 6 semester units or more in any semester when the APC meets to review academic progress are deemed to be full time students.

(i) A student, who in first semester passes none of the courses which are assessable in that semester, and who intends to proceed into second semester, shall be required to attend an interview with the Chair of the APC or nominee of the Chair of the APC. The student will be permitted to continue unless the Chair or nominee recommends that the student be required to "show cause".

(ii) A student who in first semester passes none of the courses which are assessable in that semester and who seeks deferment from the program shall be required to have the express permission of the Chair of the APC before being allowed to re-enrol. Such permission shall only be given after an interview with the Chair of the APC or the nominee of the Chair.

(iii) Where a full time student has failed more than fifty percent of the unit value of courses in which he/she enrolled for the year as at April 30 the student shall be asked to show cause why he/she should not be excluded from the program in which he/she is currently enrolled.

(iv) A student whose results at the end of a semester contain I results (incomplete) or Y results (result not applicable) shall have his/her results reviewed

when such results have been converted to a pass or fail grade, except that, after the end of January and before enrolment, any student with an I or Y grade shall have those results reviewed as if they were fail grades. However, no punitive action shall be taken until results have been converted to pass or fail grades.

(v) A student who has passed at the end of the year only one half (1/2) of the unit value of courses in which he/she is enrolled may be requested to attend an interview with the Chair of the APC before re-enrolling.

(vi) A student who after two years of active full-time study has achieved less than five semester units shall be required to "show cause".

(vii) Where a full-time student appears to be unlikely to complete the program within five years of equivalent full-time study, the student shall be asked to show cause why he or she should not be excluded from the program in which he or she is currently enrolled.

(viii) The Academic Progress Committee may require a student to show cause why his/her enrolment should not be restricted when it is satisfied that the student's academic history indicates that he/she has been enrolling in too many courses to be successful in all.

(ix) The Academic Progress Committee may restrict a student's enrolment when it upholds an appeal against exclusion from re-enrolment.

(x) A student who has twice failed a course by receiving either a WN or an N grade normally may not be permitted to re-enrol in that course.

(xi) Only in exceptional circumstances may a student be permitted to enrol in courses the total weighting of which is more than 8 semester units in one year of enrolment. An example of "exceptional circumstances" for the purposes of this clause would be where a student could complete degree requirements within one year and assures the enrolment officer that the units taken in excess of 8 semester units would not jeopardise his/her chances of passing the units in which the student enrols.

A student may formally request the Academic Progress Committee to consider or, if the request has been denied by an enrolment officer, re-consider, an application to undertake more than 8 semester units in one year of enrolment.

B. Part time students

Students who are enrolled in 5 semester units or less in any semester when the APC meets to review academic progress are deemed to be part time students.

(i) A student who after four semesters of active enrolment has achieved no credit shall be required to "show cause".

(ii) A part time student who passes in less than 7 semester units after enrolment in 6 semesters shall be required to account for his/her progress and set out how the student expects to complete program requirements within 10 years.

(iii) A part time student who fails all of the unit value of the courses for which he/she has enrolled shall be sent a letter from the APC alerting the student to the University's range of support services, and reminding the student of the time limit for completing the program.

(iv) Where a part time student has passed less than 10 semester units following enrolment over a period of 8 semesters the student shall be asked by the APC to "show cause".

(v) Where a part-time student appears to be unlikely to complete the program within ten years of study, the student shall be asked to show cause why he or she should not be excluded from the program in which he or she is currently enrolled.

(vi) The Academic Progress Committee may require a student to show cause why his/her enrolment should not be restricted when it is satisfied that the student's academic history indicates that he/she has been enrolling in too many courses to be successful in all.

(vii) A student who has failed a course, that is, received an WN or an N grade, twice in the same course, normally may not be permitted to re-enrol in that course.

(viii) A student whose results at the end of a semester contain I results (incomplete) or Y results (result not applicable) shall have his/her results reviewed when such results have been converted to a pass or fail grade, except that, after the end of January and before enrolment any student with an I or Y grade shall have those results reviewed as if they were fail grades. However, no punitive action shall be taken until results have been converted to pass or fail grades.

(ix) The Academic Progress Committee may restrict a student's enrolment when it upholds an appeal against exclusion from re-enrolment.

C. Honours Program

Applications for admission to an honours program will be considered by the School's Admissions and Progress Committee on the recommendation of the BA Honours, Masters Preliminary and B.Litt. Committee. The APC Committee will normally admit only applicants who have completed a BA Humanities degree with an average of D level or higher in the area in which they propose to read for honours.

In determining whether an applicant may be admitted to an honours program the Committee may consider:

(i) academic ability of the applicant as shown by previous studies;

(ii) quality of the proposal made by the applicant;

(iii) suitability of research topic and availability of appropriate supervisor;

(iv) availability of facilities such as library and equipment.

The APC Committee may at the time of approving an application specify the following:

(i) field

(ii) thesis topic

(iii) supervisor

(iv) coursework and study mode

(v) assessment panel

(vi) attendance type (full/part)

(vii) expected completion date

(viii) any special facilities or conditions.

D. Referrals from Assessment Panels

Assessment panels may request the Academic Progress Committee to consider the continued enrolment of a student if they think his/her progress is unsatisfactory. This may be done at any time during the year.

Section V

Bibliographical notes on Contributors

Andrée Bastard is a consultant to the Centre National d'Enseignement a Distance, France. This Centre is located within the Ministry of Education. She specialises in distance education international relations and publications.

Dr Tony Bates is Professor of Educational Media Research, Institute of Educational Technology, The Open University, United Kingdom. He has written extensively on the uses of media and information technology in distance education. Recent publications include: *Broadcasting in Education*, London, Constable, 1984 and *Role of Technology in Distance Education*, London, Croom Helm, 1984.

Mohand Benmouhoub is the Secretaire Generale du Centre National d'Enseignement Generalise, Algeria.

Dr Miguel Casas-Armengol is a member of the Educational Research Institute, Universidad Nacional Abierta (UNA), Venezuela. He acts as a researcher and advisor to the UNA. He chaired the committee that designed the UNA which was opened in 1975 and he became its first Rector. He holds a degree in architecture from the National University of Colombia and a PhD in education from Stanford University, USA. He is the author of many publications about university planning and innovations in higher education, especially distance education. He has been a consultant in university planning and higher distance education for several institutions, including Cresalc/Unesco. Recent publications include: "Educacion Superior a Distancia en Venzuela" in *Teoria y Praxis de la Universidad a Distancia*, Fedes, Caracas, 1987; *Universidad sin Clases. Educacion a Distancia en A. Latina*, Kapelusz, Caracas, 1987; "Estado de la Investigacion en la Universidad Lainoamericana" in *Docencia Post-Secundaria*, Volume 15, Number 1, Guadalajara.

Angela S. Castro is a Senior Tutor in Distance Education, Institute of Distance Education, Deakin University, Australia. She is an instructional designer and information technology researcher. Her publications are mainly on computer communications. She has acted as a consultant to the Chinese Radio and Television Universities in 1986 and to the United Kingdom Open University in 1988.

Christine Crocker is a reader services librarian, Deakin University, Australia. Her special interests are library services, student support systems and technology. She has published many articles on library services to distance students.

Marjorie Tualnakore Crocombe is from the Cook Islands. She is Director of Extension Services at the University of the South Pacific, Fiji, which offers distance learning services to eleven countries in the region.

Marian Croft is the Director, Centre for Continuing Education, Laurentian University, Canada.

Dr John Daniel is the President of Laurentian University, Canada. His special interest is the organization of distance education systems. He has ninety publications to his credit in the areas of materials, metallurgy, communications and distance education. From 1982 to 1985 he was President of the International Council for Distance Education.

Dr Keith Harry is the Documentation Officer, International Centre for Distance Education of the United Nations University. His special interests are: information and documentation, electronic communications and making information and documentation accessible to developing countries. Publications are: K. Harry, A. Kaye and K. Wilson, *The European experience of the use of mass media and distance methods for adult basic education*, 2 volumes,

Milton Keynes, Open University Distance Education Research Group,1981; A. Kaye and K. Harry (eds), *Using the media for basic education*, London, Croom Helm, 1982; K. Harry, *Distance Education in Western Europe. A selective annotated bibliography of current literature*, Berlin, GEDEFOP, 1986; G. van Enckevort, K. Harry, P. Morin and H. Schutze (eds), *Distance Higher Education and the adult learner*, Haarlen, Dutch Open University/Van Gorsum.

Dale Holt is a Senior Tutor in Distance Education, Institute of Distance Education, Deakin University, Australia. He is an advisor to management and accounting courses by distance education. His special interest is professional development distance education programmes, including the research methodologies in evaluating such programmes.

Philip Juler is a Senior Lecturer in Distance Education, Institute of Distance Education, Deakin University, Australia. His special interests in distance education are in the interpretation and evaluation of text and in assessment and evaluation. He has published in the areas of mechanical engineering and in distance education.

Dr Walid Kamhawi is President, al-Quds Open University, Jordan. His special interests are establishing the al-Quds Open University, the philosophy and objectives of distance education and international cooperation and the global networking of distance education activities. Publications are: *Planned Parenthood*, 1954 and *Holocaust and Reconstruction*, 1963.

Dr Nalova Lyonga is a Lecturer in the Department of African Literature, University of Yaounde, Cameroon. Her special interests are curriculum design and the applications of advanced communication technologies in distance education.

Professor (emeritus) Dr sc Horst Möhle formerly held the Chair of University Pedagogics, Karl Marx University, Leipsig, GDR, and was Vice Rector of the same University. He is a member of the National Unesco Commission of the GDR and is head of URANIA (Society for Spreading Popular Scientific Knowledge) in Leipsig. Special interests and publications are in the areas of the pedagogical and psychological foundations of adult education and creative academic work by distance students. Publications include: "Initial and postgraduate studies in the GDR organized as distance education" in *Higher Education in Europe*, Volume V111, Number 3, Unesco/Cepes,1983; "Postgraduate Study by Means of Distance Education in the GDR" in *Distance Education for the Updating of Knowledge at Postgraduate Level*, Bucharest, Unesco/Cepes,1982.

Olga Marta Murillo-Ugalde is an Academic Productor, Universidad Estatal a Distancia, Costa Rica. Her special interests are the production of written course materials in distance education.

Professor Paul Northcott is a Visiting Professor and Course Director, Master of Business Administration (MBA) in Retailing and Wholesaling by Distance Learning, Department of Business and Management, University of Stirling, Scotland, United Kingdom. From 1982 to 1987, he was the Chairman of the Distance Education Unit (now the Institute of Distance Education), Deakin University, Australia. His research, publication, consultancy and teaching interests include: senior management education and training by distance education; policy studies in distance education; the applications of technology to distance education and the professional development of distance educators. He has worked for Unesco in India and for the Commonwealth Fund for Technical Cooperation in the Southern Africa Development Coordination Conference (SADCC) region.

Professor Aba Segua Sagoe is a Lecturer and Administrator at the University of Jos, Lagos, Nigeria. She is particularly interested in the applications of distance education to the medical profession.

Achour Seghouani is Director of the Centre National d'Enseignement Generalise, Algeria. This institution provides distance teaching to a wide public by means of correspondence, radio and television.

Leslie Smith is a Lecturer and Deputy Sub Dean, School of Humanities, Deakin University, Australia. His distance education interests include computer assisted learning, computer graphics and the computer assisted analysis of student records. An exhibition of his work: " Computer Landscapes" was mounted at Deakin University in 1987. He has contributed to the teaching of the Visual Arts by distance education.

Dr W. A. S. Smith is an Emeritus Professor, Canada. His special interests in distance education are in the areas of the organization and management of distance education systems.

Professor Vladimir Sollanik is Dean of the Ukrainian SSR Distance Education Polytechnic Institute, USSR. His special research interests include planning, methodology and teaching resources.

Professor Wichit Srisa-an is Permanent Secretary for University Affairs, Thailand. He was the founding head of the Sukhothai Thammathirat Open University, Thailand, a position he held until late 1987. Special interests in distance education are: management, delivery systems, financing and student services. Two recent publications are: "Financing and Cost-Effectiveness of Distance Education" *Distance Education in Asia and the Pacific*, Volume 1. Proceedings of the Regional Seminar on Distance Education, 26 November-3 December 1986, Bangkok, Thailand, pp 493-532; "The Distance Learning University in Mass Society" *Proceedings of the Seoul National University Conference on Universites in Mass Society*, Seoul, October 5-10,1982, Seoul National University Press, 1982, pp 169-175.